State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	2-1-2012
API#:	47-009-00101°

ON: Elevation: 1170'	_ Quadrangle: _	Bethany, WV		
	G. Brook	1 0		
District: Buffalo Latitude: 1050' Feet South of 40 Deg.	County: Brook			
Longitude 10730 Feet West of 80 Deg.				
Company: Chesapeake Appalachia, L.L.C.	10.0			
Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Oklahoma City, OK 73154-0496	20"	100'	100'	Driven
Agent: Eric Gillespie	13 3/8"	382'	382'	447 cf
Inspector: Bill Hendershot	9 5/8"	1770'	1770'	820 cf
Date Permit Issued: 4/8/2011	5 1/2"	13019'	13019'	2797 cf
Date Well Work Commenced: 8/10/2011				
Date Well Work Completed: 11/5/2011				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig				
Total Vertical Depth (ft): 5,973'(Cement plug @12,925'	y)			
Total Measured Depth (ft): 13,020'				
Fresh Water Depth (ft.): 175'				
Salt Water Depth (ft.): 1271'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 309'-320'				
Void(s) encountered (N/Y) Depth(s) N				
N FLOW DATA (If more than two producing formation ducing formation Marcellus Pay as: Initial open flow MCF/d Oil: Initial open flow MCF/d Final open flow	zone depth (ft) flow 134 B		ata on separate s	sheet)
Time of open flow between initial and final tests	Hours			
atic rock Pressure 3,882 psig (surface pressure) a	afterHou	ırs		A PARTY
cond producing formation Pay zo	one depth (ft)			Min Carlo
s: Initial open flow MCF/d Oil: Initial open		bl/d		Og G

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Marine William 5/8/201.
Signature Date

Were core samples taken? Yes1	No_X	Were cuttings caught dur	ring drilling? Yes	No_X
Were Electrical, Mechanical or Geophysi	cal logs recorded on this	well? If yes, please list LV	VD GR from 5,381	'-12,970' MD
NOTE: IN THE AREA BELOW FRACTURING OR STIMULATING DETAILED GEOLOGICAL RECO COAL ENCOUNTERED BY THE W	, PHYSICAL CHANGE RD OF THE TOPS A	, ETC. 2). THE WELL I ND BOTTOMS OF AI	LOG WHICH IS A S LL FORMATIONS,	SYSTEMATI
Perforated Intervals, Fracturing, or Stimu	lating:			
See Attached)				
				
	15 1/			
Plug Back Details Including Plug Type a	nd Depth(s): Cement	@ 12,925'		
·		·		
Formations Encountered: Surface:	Top Dept	h /	Bottom	<u>Depth</u>
(See Attached)				
			· · · · · · · · · · · · · · · · · · ·	

<u>Mark Owen 3H</u>	MD	
<u>Lithology</u>	Top Depth (ft)	Bottom Depth (ft)
SHALE	0	100
SHALE/LIMESTONE	100	220
SHALE/SANDSTONE/LIMESTONE	220	280
SHALE/SANDSTONE	280	309
COAL	309	320
SHALE/LIMESTONE/SILTSTONE/COAL	320	360
SHALE/LIMESTONE/SILTSTONE/SANDSTONE	360	385
SHALE/LIMESTONE	385	450
SHALE	450	540
SHALE/LIMESTONE	540	720
SHALE/LIMESTONE/SANDSTONE	720	780
SHALE/SANDSTONE	780	840
SHALE/SANDSTONE/LIMESTONE	840	900
SHALE/SANDSTONE	900	990
SHALE/LIMESTONE/SANDSTONE/SILTSTONE	990	1050
SHALE	1050	1075
SHALE/SILTSTONE/SANDSTONE	1075	1130
SHALE/SANDSTONE	1130	1200
SHALE/LIMESTONE/SANDSTONE	1200	1290
SHALE/SILTSTONE	1290	1320
SHALE/LIMESTONE	1320	1410
SHALE/SANDSTONE	1410	1430
SHALE/SANDSTONE/LIMESTONE	1430	1456
BIG INJUN	1456	1654
SHALE	1654	5847
GENESEO	5847	5869
TULLY	5869	5940
HAMILTON	5940	6130
MARCELLUS	6130	11340

DATE:	10/16/2012	
API #:	47-017-04035	· R

District: Mcclellan Latitude: 2,240 Feet South of 39 Deg. Longitude 11,150 Feet West of 80 Deg. Company: Petroleum Development Corporation Address: 120 Genesis Boulevard Bridgeport, WV 26330 Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on: Rotary Cable Rig Rig V	County: Doc	Sec		Cement fill up Cu. Ft. 230 618 921
Latitude: 2,240 Feet South of 39 Deg. Longitude 11,150 Feet West of 80 Deg. Company: Petroleum Development Corporation Address: 120 Genesis Boulevard Bridgeport, WV 26330 Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	22 Min 37 Min Casing & Tubing 11 3/4" 8 5/8"	Used in drilling 174' 1869'	Left in well 174' 1869'	up Cu. Ft. 230 618
Latitude: 2,240 Feet South of 39 Deg. Longitude 11,150 Feet West of 80 Deg. Company: Petroleum Development Corporation Address: 120 Genesis Boulevard Bridgeport, WV 26330 Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	22 Min 37 Min Casing & Tubing 11 3/4" 8 5/8"	Used in drilling 174' 1869'	Left in well 174' 1869'	up Cu. Ft. 230 618
Company: Petroleum Development Corporation Address: 120 Genesis Boulevard Bridgeport, WV 26330 Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	Casing & Tubing 11 3/4" 8 5/8"	Used in drilling 174' 1869'	Left in well 174' 1869'	up Cu. Ft. 230 618
Address: 120 Genesis Boulevard Bridgeport, WV 26330 Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	Tubing 11 3/4" 8 5/8"	drilling 174' 1869'	174' 1869'	up Cu. Ft. 230 618
Address: 120 Genesis Boulevard Bridgeport, WV 26330 Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	Tubing 11 3/4" 8 5/8"	drilling 174' 1869'	174' 1869'	up Cu. Ft. 230 618
Bridgeport, WV 26330 Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	Tubing 11 3/4" 8 5/8"	drilling 174' 1869'	174' 1869'	up Cu. Ft. 230 618
Bridgeport, WV 26330 Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	11 3/4" 8 5/8"	174' 1869'	1869'	230 618
Agent: Bob Williamson Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	8 5/8"	1869'	1869'	618
Inspector: David Scranage Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:		 		
Date Permit Issued: 02/10/2010 Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:	4 1/2"	5481	5481'	921
Date Well Work Commenced: 03/25/2010 Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:				
Date Well Work Completed: 03/30/2010 Verbal Plugging: Date Permission granted on:				
Verbal Plugging: Date Permission granted on:				
Date Permission granted on:		1		
Rotary Cable Rig 🗸				
Total Vertical Depth (ft): 5516'				
Total Measured Depth (ft): 5516'				
Fresh Water Depth (ft.): 140'				1
Salt Water Depth (ft.): None Reported				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 136'-39', 445'-448'				
Void(s) encountered (N/Y) Depth(s) N				
void(s) encountered (14/1) Depui(s) ···			<u> </u>	
OPEN FLOW DATA (If more than two producing formation	ns please inclu	de additional da	ita on separate s	hcet)
	one depth (ft)_			
Gas: Initial open flow NT MCF/d Oil: Initial open flow	owB		ender kreene bled	s grant de l'indication
Final open flow 60 MCF/d Final open flow		ol/d -		
Time of open flow between initial and final tests 48 Static rock Pressure NT psig (surface pressure) aff				
position production and production a	100	15	79 f S	T 17 30 Z
	e depth (ft)	×	UU	1 20 000
Gas: Initial open flowMCF/d Oil: Initial open flow		bl/d		
Final open flow MCF/d Final open flow				
Time of open flow between initial and final tests				
Static rock Pressurepsig (surface pressure) aft	erHou	rs		

Were core samples taken? Yes No	<u> </u>	Were cuttings caug	ght during drilling? Y	esNo_XX
Were Electrical, Mechanical or Geophysical 2500.	l logs recorded on this	well? If yes, please	list_Ploneer Wireline GF	R/CCL log from 3100' to
NOTE: IN THE AREA BELOW PERFORMED FRACTURING OR STIMULATING, PERFORMED FOR STIMULATING, PERFORMENT OF THE WELL OF	HYSICAL CHANGE OF THE TOPS A	E, ETC. 2). THE WI AND BOTTOMS O	ELL LOG WHICH OF ALL FORMAT	IS A SYSTEMATIC
Perforated Intervals, Fracturing, or Stimulat	ing:			
2010/03/26: JW ran a gamma/ccl log to correlate. Rai	n in hole with 4-1/2" comp	osite bridge plug. Set plu	g @ 3030'. JW shot the G	ORDON formation with the
following shots(HSC): 12 (2988-94'). RDMOL. 2010/03/2	29: MIRU Service rig. Run ir	n hole with 2-3/8" Blue Dot	packer on 2-7/8" tubing. Se	t packer depth at bottom of
tubing run @ 2445'. RDFN. 2010/03/30: Halilburton o	completed the GORDON for	rmation. The formation v	as pumped without incide	nt according to schedule.
The job was a N2 ASSIST, X-LINK with 250 sks of 20/4	10 mesh white sands. The t	ereakdown pressure was 2	466 psi. The well treated	at an average foam rate of
12.8 bpm with an average treating pressure of 3,492 p	esi. The final pressures we	re as follows: ISIP: 2529	psi, 2 min shut-in: 2067 ps	i, 5 min shut-in: 1933 psi,
10 min shut-in: 1833 psi, 15 min shut-in: 1768 psi.				
Plug Back Details Including Plug Type and	Depth(s):			
2 7/8" packer was retrieved & bi	ridge plug drilled	d out & cleaned	to 5380'.	
Formations Encountered: Surface:	Top Dept	th /	В	ottom Depth
See Attached WR-35 & "Well Log" f	rom original comp	letion of this well	(47-017-04035).	
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BATES #2

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
1ST	Benson	13(5332'-5335')	50	400	500	60
2nd	Big Injun	18(2355'-2361')	50	400	500	60

WELL LOG

FORMATION	TOP FEET BOTTOM	REMARKS: FRESH & SALT FEET WATER, COAL, OIL & GAS	
PORTALION	IOI PERI DOLLOR	THE WAIM, COME, OIL & CHE	
KB - GL	0	10 1/2" water @ 140'	
sand, shale, RR		004	
Maxton	2004 2	095 Coal @136'-139',445'-44	81
sand, shale	2095 2	178	
Big Lime	2178 2	315 gas chk @ 2347' No Show	
sand, shale		334	
Big Injun		408 gas chk @2378' 6/10 thr	u 2"/water
sand, shale		2556	
Weir		641	
sand, shale		2764	
Berea		2800 gas chk @2502' 6/10 thr	u 2"/water
sand, shale		959	
Gordon		3004	
sand, shale		282 gas chk @2660' 4/10 thr	
5th		332 gas chk @2861' 6/10 thr	
sand, shale		3633 gas chk @4029' 4/10 thr	
Warren		3718 gas chk @5205' 4/10 thr	u 2"/water
sand, shale		3740	
Speechley		982 gas chk @5297' 4/10 thr	
sand, shale		030 gas chk @5590' 4/10 thr	u 2"/water
Balltown		419	
sand, shale		492 gas chk @5516' 6/10 thr	u 2"/water
Bradford		609	
sand, shale		830	
Riley		5263	
sand, shale		5329	
Benson		5390	
sand, shale		5516 Drillers TD	
	5	5517 Logger TD	

447 IV

DATE:	10/16/2012	1	
API#:	47-017-04105	W	

Operator Well	No.: Cox Heirs	3	
_ Quadrangle: _	New Milton 7.5		
Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
11 3/4"	177'	177'	128
8 5/8"	1815'	1815'	615
4 1/2"	5662'	5662'	902
1.			
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	<u> </u>		
ions please inclu	de additional d	ata on separate s	sheet)
		-	•
			and the
		#** * * * * * * * * * * * * * * * * * *	
			ar 17 mi
• • •—		L	
			
	Quadrangle: _ County:	Quadrangle: New Milton 7.5 County: Doddridge 10 Min. 00 Sec 42 Min. 30 Sec Casing & Used in drilling 11 3/4" 177' 8 5/8" 1815' 4 1/2" 5662' 10 Min. 30 Sec Casing & Used in drilling 11 3/4" 177' 8 5/8" 1815' 4 1/2" 5662' 10 Min. 30 Sec Casing & Used in drilling 11 3/4" 177' 8 5/8" 1815' 4 1/2" 5662' 10 Min. 30 Sec Casing & Used in drilling 11 3/4" 177' 8 5/8" 1815' 4 1/2" 5662' 10 Min. 30 Sec In the second in drilling In the second in t	County: Doddridge 10 Min. 00 Sec. 12 Min. 30 Sec. Casing & Used in drilling 11 3/4" 177' 177' 8 5/8" 1815' 1815' 4 1/2" 5662' 5662' 10 Doddridge 11 3/4" 177' 177' 10 B 5/8" 1815' 1815' 4 1/2" 5662' 5662' 10 Doddridge 11 3/4" 177' 177' 10 B 5/8" 1815' 1815' 11 B 15' 1815' 12 Doddridge 13 Doddridge 14 Doddridge 15 Doddridge 16 Doddridge 16 Doddridge 17 Doddridge 18 Doddri

Were core samples taken? YesN	o_XX	Were cuttings caught dur	ing drilling? Yes	_ _{No_} XX
Were Electrical, Mechanical or Geophysic 3000' - 2400'.	al logs recorded on this w	vell? If yes, please list Ho	twell Wireline GR/C0	CL log from
NOTE: IN THE AREA BELOW I FRACTURING OR STIMULATING, DETAILED GEOLOGICAL RECOR COAL ENCOUNTERED BY THE WE	PHYSICAL CHANGE, D OF THE TOPS AN	ETC. 2). THE WELL L ND BOTTOMS OF AL	OG WHICH IS A SY L FORMATIONS, 1	STEMATIC
Perforated Intervals, Fracturing, or Stimul	ating:			
2009/08/07: MIRU Hotwell Service Wireline &	Halliburton Frac Crew. Ra	n in hole and set composite	bridge plug at 3,010'. Pr	ressure tested
lines to 4,500 psig. Filled hole with 12 bbt of acid	and treated water. Pressure	tested to 3,500 psig. Perfora	ed and fractured Gordon	
formation. Stimulated well with 30 quality N2 assist; 25004 tbs of 20	/40 white sand and 65117 scf N2 (ATP ;	2352 psig, MTP 2597 psig) (Avg Rates 23	i.6 bpm; 4089 scfm). Broke down to	rmation at 2597 psig
Pumped a pad of 27 bbl, 2.150 scf @ 17.9 bpm, 1,316 scfm. Ramped sar	nd concentrations from .5-4 pps in 287 bbl, !	5,161 stm @ 28.3 bpm, 82,838 sci. Pumped	i 330 bbl of slumy. Flushed with 7 bbl s	pacer, 12 bbl 20% HCI,
8. 31 bbl of treated H2O @ 11 bpm. ISIP 1,627 psig. 2 min 1,483 psig,	5 min 1,373 psig, 10 min 1,333 psig, 15 m	in 1,313 psig. Hotwell set a flow through co	mp. plug at 2,683'. Perforated and fra	ctured Weir formation.
Stimulated well with 30 quality N2 assist, 31,563 lbs of 20/40 white se	and and 155,079 scf N2 (ATP 2,763 psig,	MTP 3,644 psig) (Avg Rates 22.0 bpm; 5,	305 scfm). Broke down formation at	3644 psig. Pumped a
Plug Back Details Including Plug Type an	d Depth(s): pad of 50 bbl, 6617	scf @ 17,1 bpm, 1995 scfm. Ramped sa	nd concentrations from .5-3 ppa in	264 bbl, 92110 sfm
@ 23 bpm, 5,704 scfm.Held 3# sand concentration for 62	2 bbl, 19,456 scf @ 24 bpm, 5,779	scfm. Held 4# sand concentration	for 45 bbl, 20,722 scf @ 18.5	bpm, 5,783 scf. **
Formations Encountered: Surface:	Top Depth	1	Bottom D	<u>Depth</u>
See Attached WR-35 & "Well Log"	from original comple	etion of this well (47-0)17-04105).	
**Pumped 299 bbl of slurry in ramp. Pumped 107 bbls of slurr	ry in 3 & 4# holds. Flushed with 32 b	bi of H2O @ 11 bpm ISIP 2580 ps/g,	1 min 2183 psig, 2 min 2152 psi	g, 5 min 2097 ps:g,
10 min 2060 psig, 15 min 2034 ps	lg.			
				777

COX HEIRS #3

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
lst	Alexander	16 (5532'- 5535')	58	306	500	50
2nd	Benson	16 (5132'- 5135')	58	310	500	39

WELL LOG

FORMATION	TOP FEET BOTTOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
PORPATION	IOI PEEL BOILON LEEL	william, out a cons
KB - GL	0 10	1/2" water @ 40'
sand, shale, RR	10 2112	2,2 112022 € 11
Maxton	2112 2228	
sand, shale	2228 2306	1" water @ 1784'
Big Lime	2306 2398	gas chk @ 2291' No Show
sand, shale	2398 2403	8
Big Injun	2403 2452	gas chk @ 2387' No Show
sand, shale	2452 2595	
Weir	2595 2652	
sand, shale	2652 2764	
Berea	2764 2788	gas chk @ 2448' No Show
sand, shale	2788 2972	6
Gordon	2972 2983	gas chk @ 2670' No Show
sand, shale	2983 3312	
Bayard	3312 3333	gas chk @ 2750' No Show
sand, shale	3333 3622	gas chk @ 2921' No Show
Warren	3622 3757	gas chk @ 3110' No Show
sand, shale	3757 3785	gas chk @ 3444' No Show
Speechley	3785 4154	gas chk @ 4333' No Show
sand, shale	4154 4204	gas chk @ 5119' No Show
Balltown	4204 4611	gas chk @ 5212' No Show
sand, shale	4611 4646	gas chk @ 5274' No Show
Bradford	4646 4817	gaz ann Ç ann
sand, shale	4817 5000	gas chk @ 5430' No Show
Riley	5000 5174	gas chk @ 5682' No Show
sand, shale	5174 5228	gas chk @ TD No Show
Benson	5228 5270	5
sand, shale	5270 5344	
Leopold	5344 5455	
sand, shale	5455 5475	
Alexander	5475 5590	
sand, shale	5590 5750	Drillers TD
rane, energy	5748	Logger TD

001 11 194

DATE:	10/16/2012
API #:	47-017-04106 V

Farm name: Hinter, Phyllis, Et Al	Operator Well	No.: Cox Heirs	4	
LOCATION: Elevation: 1,124 GL	Quadrangle: _	New Millon 7.5		
District: New Milton	County:Doc	ldridge		
Latitude: 2,630 Feet South of 39 Deg.	10Min	. 00 Sec	•	
Longitude 4,620 Feet West of 80 Deg.	42Min	. <u>30</u> Sec	•	
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Lest in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	16"	12'	12'	Sanded In
Agent: Bob Williamson	11 3/4"	174'	174'	124
Inspector: David Scranage	8 5/8"	1745'	1745'	599
Date Permit Issued: 04/27/2009	4 1/2"	5579'	5579'	904
Date Well Work Commenced: 07/27/2009				
Date Well Work Completed: 07/29/2009				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig 🗸				
Total Vertical Depth (ft): 5616				
Total Measured Depth (ft): 5616'				
Fresh Water Depth (ft.): 127', 1638'				
Salt Water Depth (ft.): None Reported				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): None Reported				
Void(s) encountered (N/Y) Depth(s) N				
OPEN ELOW DATA (If more than two medicains formati		4. (1.15.)		
OPEN FLOW DATA (If more than two producing formati Producing formation Gordon Pay	ons prease inclu zone depth (ft)		ita on separate s	sheet)
Gas: Initial open flow 237 MCF/d Oil: Initial open f		bl/d		
Final open flow 146 MCF/d Final open flow	w <u>3</u> Bt	ol/d	No. 1	•
Time of open flow between initial and final tests				+ 4
Static rock Pressure NT psig (surface pressure) a	fterHou	rs		5 5- 7 H 5 333
Second producing formation Weir (commingled) Pay zo	one depth (ft) 24	142'		2007.31/2012
Gas: Initial open flow MCF/d Oil: Initial open f		bl/d		
Final open flowMCF/d Final open flow	wBt	ol/d		
Time of open flow between initial and final tests	Hours			
Static rock Pressurepsig (surface pressure) a	fterHou	ts		
I certify under penalty of law that I have personally examined	and am familia	with the inform	nation submitted	d on this document and
all the attachments and that, based on my inquiry of those indi	viduals immedia	ately responsibl	e for obtaining	the information I believe
that the information is true, accurate, and complete.			_	
Filli	\	10/1	6/2012	
Signature	·		Date	

Were core samples taken? Yes	No_XX	Were cutting	gs caught during drillin	ig? Yes	_No_XX
Were Electrical, Mechanical or Geophys Hotwett Wireline GR/CCL log from 3000 - 2300.	sical logs recorded on	this well? If yes, p	please list		
NOTE: IN THE AREA BELOW FRACTURING OR STIMULATING DETAILED GEOLOGICAL RECO COAL ENCOUNTERED BY THE W	, PHYSICAL CHA RD OF THE TOI	NGE, ETC. 2). TE PS AND BOTTO	HE WELL LOG WHI MS OF ALL FORM	ICH IS A SY	STEMATIC
Perforated Intervals, Fracturing, or Stim	ulating:				
07/27/2009: MIRU Hotwell Service Wireline & ran in hole a	nd set composite bridge plug a	al 2,890°. RU BJ Serv. & Sti	mulated well with 30 quality N2 a	issist, 20,129 lbs of	20/40 white sand
and 64,000 sci N2(ATP 2,470 palg, MTP 2,676 palg) (Avg Raics 20bpm; 6.	500 scim). Broke down fermalion at 2,0	85 psig. Pumped a pad ol 39 bbl, 1	18,000 scl @ 15 bpm, 6,600 scfm. Rampe	d sand concentrations to	om .5-4 ppa in 154 bbl
46,000 sfm @ 20 bpm, 6,600 scfm. Pumped 175 bbl of	sturry (154 bbl of clean Lines	ar 1,500 Gel). Flushed with	h 2 bbl spacer, 10 bbl 15% HCl	, & 35 bbl of treate	ed H2O @ 19 bpm.
ISIP 1855 paig. 1 min 1524 psig. 2 min 1500 psig. 5 min 1432 psig. 10	min 1404 psig. 15 min 1380 psig.Ho	otwell set a flow through comp. p	lug at 2.513°.Stimulated well with 25 qu	ality N2 assist, 35157 l	bs of 20/40 white sand
and 155000 sel N2 (ATP 3233 psig. MTP 3328 psig) (Avg Rates 22 bpm;	7700 scfm). Brokedown formation at 2	130 psig. Pumped a pad of G4 bbl	. 24000 scf @ 22 bpm, 6700 scfm, Ramp	ed sand concentrations	from 5-3 ppe in 283 bbl.
115000 stm @ 23 bpm, 7700 scfm. Held 3# send concentration to				-	
Plug Back Details Including Plug Type	and Depth(s): (283 bbl o	f clean Linear 1500 Gel). Pu	imped 38 bbls of sturry in 3 & 4# i	icids (34 bbl of clea	n Linear 2000 Gel).
Flushed with 40 bbl of H2O @ 23 bpm.ISIP 2	2263 psig, 1 min 1858 p	sig, 2 min 1828 psig,	, 5 min 1795 psig, 10 min	1770 psig, 15	min 1740 psig.
Formations Encountered: Surface:		Depth		Bottom D	<u> Jepth</u>
See Attached WR-35 & "Well Log	g" from original co	ompletion of this	s well (47-017-041	06).	
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					Mandalah da ang ang ang ang ang ang ang ang ang an
					
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COX HEIRS #4

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
1st	Alexander	13 (5212'-5363')	50	400	500	51
2nd	Benson/Riley	12 (4644'- 4997')	50	400	500	45

WELL LOG

FORMATION		TOP FEET	BOTTOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
VD CT		0	10	1/28 water @ 127/
KB - GL	ממ	10		1/2" water @ 127' 1/2" water @ 1638'
sand, shale,	KK	1943		1/2. Mater @ 1039.
Maxton				
sand, shale		2012		gas chk @ 2109' No Show
Big Lime		2204		gas chk @ 2173' No Show
sand, shale		2249		gas chk @ 2235' No Show
Big Injun		2252		11 0 0000
sand, shale		2326		gas chk @ 2362' No Show
Weir		2424		
sand, shale		2535		gas chk @ 2580' No Show
Berea		2630		
sand, shale		2656		gas chk @ 2771' No Show
Gordon		2819		
sand, shale		2850		gas chk @ 2990' No Show
5th		3170		gas chk @ 3084' No Show
sand, shale		3218		gas chk @ 3366' No Show
Warren		3470		_
sand, shale		3642	3760	
Speechley		3760	4140	
sand, shale		4140	4154	
Balltown		4154	4434	
sand, shale		4434	4491	
Bradford		4491		gas chk @ 4555' No Show
sand, shale		4642		9 c C 1220 210 2110 11
Riley		4826		
sand, shale		4049		gas chk @ 5056' No Show
Benson		5092		Per our 6 2020 No prior
sand, shale		5132		gas chk @ 5150' No Show
Leopold		5186		Per cur 6 2120 110 9110M
sand, shale		5234		gas chk @ 5305' No Show
Alexander		5328		gas chk @ 5522' No Show
sand, shale		5469		Drillers TD
sano, suate		5405	2010	DITTIELS IN
			5621	Logger TD

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	10/16/2012	
API#:	47-017-04108	F

ION: Elevation: 956' GL	Quadrangle: _	Salem 7.5		
District:	County:			
Latitude: 13,795 Feet South of 39 Deg.	22 Min.			
Longitude 8,584 Feet West of 80 Deg.	35Min.	Sec.		
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	16"	30'	30'	Sanded In
Agent: Bob Williamson	11 3/4""	177'	177'	130
Inspector: David Scranage	8 5/8"	1609'	1609'	511
Date Permit Issued: 03/22/2010	4 1/2"	5045'	5045'	929
Date Well Work Commenced: 04/05/2010				
Date Well Work Completed: 04/06/2010				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig 🗸			REC	EIVED
Total Vertical Depth (ft): 5087'			Office of	Oil & Gas
Total Measured Depth (ft): 5087'			ՈՐ 1	
Fresh Water Depth (ft.): 50', 270'				7 2012
Salt Water Depth (ft.): None Reported			WV Den	artment of
Is coal being mined in area (N/Y)? N		En	Vironmen	al Protec
Coal Depths (ft.): 200'			VII Q 111 (11 21 1	TO FIOLE
Void(s) encountered (N/Y) Depth(s) N				
N FLOW DATA (If more than two producing formation Gordon Pay is as: Initial open flow 119 MCF/d Oil: Initial open flow Time of open flow between initial and final tests psig (surface pressure) af	zone depth (ft)_ilow	2578, 2654 ol/d l/d	ia on separate sl	neet)
econd producing formation Keener (commingled) Pay zo				
as: Initial open flow MCF/d Oil: Initial open fl				
Final open flow MCF/d Final open flow Time of open flow between initial and final tests				
tatic rock Pressurepsig (surface pressure) at				
				on this documen

Signature

Date

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Pioneer Wirefine GRCCL log from 2800' to 1630'. NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH. Perforated Intervals, Fracturing, or Stimulating: MIRU Pioneer Wireline & Halliburton: Pioneer ran a GR/CCL to correlate. Set 4 1/2" composite bridge plug @ 2730'. Nationate vibrated and the set of the set of the set of the set of pressure and brief and set of the set of pressure and brief and set of the set of pressure and brief and set of the set of pressure and brief and set of the set of pressure and brief and set of the set of pressure and brief and set of the set of pressure and brief and set of the set of pressure and brief and set of the set of the set of the set of pressure and brief and set of the set of the set of pressure and brief and set of the set of the set of the set of pressure and brief and set of the set
FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH. Perforated Intervals, Fracturing, or Stimulating: MIRU Pioneer Wireline & Halliburton: Pioneer ran a GR/CCL to correlate. Set 4 1/2" composite bridge plug @ 2730'. Hittouton kulhaeaded 20% HCI sold into well and filed hole with water to pressure lead creding to 3000 pit. Well hald pressure. Bith off pressure and turned well back over to perforators. Poneer shot the 000000 filemation with the following should-HCI) 9 (2857-41) 4 (2877-41)-Hallburton compilated the 0000001 formation. The formation was pumped without incident according to schedule. The job mass in RASSET, X-INK (300 feem)-with 300 also of 20400 mosh brown sand. The destablions pressure or 2700 pit. The their pressures were a bloom. 180: 2179 pit 2 min-shub-it. 1909 pit 3 min shub-it. 1909 pit 3 min shub-it
MIRU Pioneer Wireline & Halliburton: Pioneer ran a GR/CCL to correlate. Set 4 1/2" composite bridge plug @ 2730'. Halbiturton bullhanded 29% HCl and into well and filted hole with water to pressure bath. Pressure betted cashing to 3500 plt. Well hold pressure. Bited oil pressure and harmed well bath over to performance. Ponneer after the GORDON formation with the following shotalyHSC) 9 (2857-61') & 9 (2577-61') Halliburton completed the GORDON formation. The formation was pumped without incident according to schedule. The job was a N2 ASSIST, X-LINK (300 form) with 300 also 20400 mash brown sand. Thebranations pressure was 2404 pat. The well treated at an everage foam rate of 218 bpm with an monege treating pressure of 2700 plt. The final pressures were before: 1807-2179 pat. 2 min short-in: 1906 ppt is min short-in: 1939 pat 15 min sh
Histourison builheaded 20% HCI acid into wet and filted hole with water to pressure tested casing to 3500 pst. Well hald pressure. Sted off pressure and turned well back over to perforators. Ponneer shot the GORDOM formation, The formation was pumped without incident according to schedule. The job was a NZ ASSIST, X-LINK (300 foam) with 300 aks of 2040 mesh brown sand. Thebraskdown pressure was 2484 pst. The well treated at an average foam rate of 21.9 bpm with an average treating pressure of 2700 pst. The first pressures were as billows: 1807-2179 pst. 2 min sturist; 1500 pst. 5 min shorts; 1500 p
Pioneer shot the GORDON formation with the following shots/HSC) # (2857-81') & 9 (2857-81') A 9
to schedule. The job was a NZ ASSIST, X-LINK (300 (sem) with 300 aks of 2040 mesh brown and Thebrosidown pressure was 2494 pal. The well treated at an average foam rate of 21.9 bpm with an normage testing pressures of 2700 pal. The first pressures were as below: 1807-2179 pal. 2 min shurks: 1939 pal. 19 min shurks: 1930
Pioneer set a 4-1/2" composite flow-through fracplus. Set plug @ 1940'. Chased the frac ball to plug and shot The KEENER formation with the following *** Plug Back Details Including Plug Type and Depth(s): Bridge plug set @ 2730', frac plug set @ 1940', both drilled out & hole cleaned to original TD of 5089'. Formations Encountered: Top Depth / Bottom Depth Surface: See Attached WR-35 & "Well Log" from original completion of this well (47-017-04108). RECEIVED Office of Oll & Gas OCT 1.7 2012 **** shots(HSC): 12 (1908-12) & 4(1893-95'). Halliburton completed the KEENER formation. The formation was pumped without incident according to schedule. The job was a N2 ASSIST, X-LINK (300 foam) with 296 sks of 20/40 mesh brown sand. The breakdown pressure was 1055 psi. The well treated at an
Ploneer set a 4-1/2" composite flow-through fracplug. Set plug @ 1940'. Chased the frac ball to plug and shot The KEENER formation with the following "" Plug Back Details Including Plug Type and Depth(s): Bridge plug set @ 2730', frac plug set @ 1940', both drilled out & hole cleaned to original TD of 5089'. Formations Encountered: Top Depth / Bottom Depth Surface: See Attached WR-35 & "Well Log" from original completion of this well (47-017-04108). RECEIVED Office of Oil & Gas OCT 1 7 2012 WV Department of Environmental Protection **** shots(HSC): 12 (1906-12') & 4(1893-95').Halliburton completed the KEENER formation. The formation was pumped without incident according to schedule. The job was a N2 ASSIST, X-LINK (300 foam) with 296 sks of 20/40 mesh brown sand. The breakdown pressure was 1055 pst. The well treated at an
Plug Back Details Including Plug Type and Depth(s): Bridge plug set @ 2730', frac plug set @ 1940', both drilled out & hole cleaned to original TD of 5089'. Formations Encountered: Top Depth / Bottom Depth Surface: See Attached WR-35 & "Well Log" from original completion of this well (47-017-04108). RECEIVED Office of Oil & Gas OCT 1 7 2012 WV Department of Environmental Protection *** shots(HSC): 12 (1906-12') & 4(1893-95'). Halliburton completed the KEENER formation. The formation was pumped without incident according to schedule. The job was a N2 ASSIST, X-LINK (30Q foam) with 296 sks of 20/40 mesh brown sand. The breakdown pressure was 1055 psi. The well treated at an
Bridge plug set @ 2730', frac plug set @ 1940', both drilled out & hole cleaned to original TD of 5089'. Formations Encountered: Top Depth / Bottom Depth Surface: See Attached WR-35 & "Well Log" from original completion of this well (47-017-04108). RECEIVED Office of Oil & Gas OCT 1 7 2012 WV Department of Environmental Protection **** shots(HSC): 12 (1906-12') & 4(1893-95'). Halliburton completed the KEENER formation. The formation was pumped without incident according to schedule. The job was a N2 ASSIST, X-LINK (30Q foam) with 296 sks of 20/40 mesh brown sand. The breakdown pressure was 1055 psi. The well treated at an
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Environmental Protection *** shots(HSC): 12 (1906-12') & 4(1893-95'). Halliburton completed the KEENER formation. The formation was pumped without incident according to schedule. The job was a N2 ASSIST, X-LINK (30Q foam) with 296 sks of 20/40 mesh brown sand. The breakdown pressure was 1055 psi. The well treated at an
The job was a N2 ASSIST, X-LINK (30Q foam) with 296 sks of 20/40 mesh brown sand. The breakdown pressure was 1055 psi. The well treated at an
average foam rate of 14.8 bpm with an average treating pressure of 3217 psi. The final pressures were as follows: ISID: 2070 psi
2 min shut-in:2069 psi, 5 min shut-in: 1945 psi, 10 min shut-in: 1830 psi, 15 min shut-in: 1775 psi. RDMOL

Glenn Rogers #1

STAGE	FORMATION	PERFS	SKS	20/40 SKS	GAL	N2 (MCF)
lst	Benson	14 (4924'- 4978')	. 50	550	500	58

WELL LOG

FORMATION	TOP FEET BO	TTOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
KB - GL	0	10	Hole damp @ 50'
sand, shale, RR	10	1634	1/2 stream water @270'
Maxton	1634	1722	
sand, shale	1722	1832	gas chk @ 1763' No Show
Big Lime	1832	1922	
sand, shale	1922	1925	gas chk @ 1919' No Show
Big Injun	1925	1974	
sand, shale	1974	2158	gas chk @2103' 10/10 thru 1"/water
Weir	2158	2262	gas chk @2259' 50/10 thru 1"/water
sand, shale	2262	2350°	, , , , , , , , , , , , , , , , , , , ,
Berea	2350	2382	
sand, shale	2382	2656	gas chk @2506' 14/10 thru 1"/water
Gordon	2656	2680	, , , , , , , , , , , , , , , , , , , ,
sand, shale	2680	2912	gas chk @2693' 6/10 thru 2"/water
5th	2912	2980	
sand, shale	2980	3236	gas chk @3127′ 6/10 ⁻ thru 2"/water
Warren	3236	3340	, , , , , , , , , , , , , , , , , , , ,
sand, shale	3340	3377	
Speechley	3377	3795	gas chk @3502' 4/10 thru 2"/water
sand, shale	3795	3850	,
Balltown	3850	4248	, . .
sand, shale	4248	4266	
Bradford	4266	4427	
sand, shale	4427	4638	
Riley	4638	4861	gas chk @4809' 4/10 thru 2"/water
sand, shale	4861	4906	
Benson	4906	4962	gas chk @4965' 4/10 thru 2"/water
sand, shale		5089	Drillers TD
		5087	Logger TD

DATE:	10/16/2012	
API#:	47-033-03159	T

Farm name: Harron, Ray A.	Operator Well	No.: Harron 1		
LOCATION: Elevation: 1322 GL	Quadrangle: Clarksburg			
District: Simpson	County: Harr	rison		
Latitude: 7,580 Feet South of 39 Deg.				
Longitude 3.420 Fect West of 80 Deg.				
Company: Petrolcum Development Corporation				
Address: I20 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	11 3/4"	17'	Pulled	
Agent: Beb Williamson	8 5/8"	1179'	1179'	354
Inspector: Tim Bennett	4 1/2"	4684'	4684'	820
Date Permit Issued: 04/30/2009				
Date Well Work Commenced: 06/18/2009				
Date Well Work Completed: 06/18/2009				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig 🗸				
Total Vertical Depth (ft): 4718'				
Total Measured Depth (ft): 4718'				
Fresh Water Depth (ft.): 86', 361'				
Salt Water Depth (ft.): 920', 950'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 290', 697', 770'				
Void(s) encountered (N/Y) Depth(s) N				
OPEN FLOW DATA (If more than two producing formatio	ns please includ	le additional dat	a on senarate sh	rcet)
	one depth (ft)_2		· · · · · · · · · · · · · · · · · ·	
Gas: Initial open flow MCF/d Oil: Initial open flow				
Final open flow 442 MCF/d Final open flow		/d		
Time of open flow between initial and final tests 4 Static rock Pressure 330 psig (surface pressure) aft		-		
		_		
Second producing formation 4th Send (commingted) Pay zon Gas: Initial open flow MCF/d Oil: Initial open flo				
Final open flowMCF/d Final open flow				
Time of open flow between initial and final tests	Hours			
Static rock Pressurepsig (surface pressure) aft	erI lour:	S		
I certify under penalty of law that I have personally examined a	nd am familiar	with the inform	ation submitted	on this document and
all the attachments and that, based on my inquiry of those indiv	iduals immediat	tely responsible	for obtaining th	e information I believe
that the information is true, accurate, and complete.				
The tiller		10/16	/0212	
Signature			Date	

NOTE: IN THE AREA BEL FRACTURING OR STIMULAT DETAILED GEOLOGICAL RI COAL ENCOUNTERED BY TH	TING, PHYSICAL CHAI ECORD OF THE TOP	NGE, ETC. 2). TH S AND BOTTO!	E WELL LOG W	HICH IS A S	VSTEMATIC
Perforated Intervals, Fracturing, or	Stimulating:				
6/18/2009: MIRU Weatherford & Hotwell Wire	line. Run GR/CCL log from 2710	-1600 & set BP at 2550	& perf. 5th Sand from 25	8-26 (16 hales). F	RU Weatherford &
pumped an N2 (35Q) assist Aquavis	15# gel w/ 29,870 lbs of 20	/40 sand, 149,112 S	CF N2, & 448 bbls t	reated fluid. Br	eak at 2098 psi
& avg treating foam rate was 17.6 BF	PM & ATP was 2452 psi. IS	SIP = 1849 psi, 5mir	= 1590psi, 10 min :	1570 psi, 15 i	min = 1555 psi.
RU Hotwell & set frac plug @ 2320' & p	perf. 4th Sand from 2302-08	(24 holes).RD Hotwo	ell & RU Weatherford	& pumped an f	12 (35Q) assist
Aquavis 15# gel w/ 26,452 lbs of 20/40 sa	and, 138,421 SCF N2, & 438 I	bls treated fluid. Brea	k at 3575 psi & avg tre	ating foam rate	was 14.6 BPM &
ATP was 2876 psi. ISIP = 1663 Plug Back Details Including Plug T	3 psi, 5min = 1422 psi,	10 min = 1419 ps	si,15 min = 1404	psi. RDMO \	Weatherford.
Drillable bridge & frac plug	js at 2550 & 2330.	Drilled & clea	ned out to orig	inal TD.	
Formations Encountered: Surface:	Top I	Depth	<i>L</i>	Bottom I	<u>Depth</u>
See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	
See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	
See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	
See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	
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See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	
See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	
See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	
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See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	
See Attached WR-35 & "Well	Log" from original co	mpletion of this	well (47-033-31	59).	

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. Perforated the Benson with 13 shots (4611'-15'). Performed gelled H20 frac w/N2 assist using 608 bbl of sand laden fluid (15,000# of 80/100 sand and 50,000# of 20/40 sand). Also used 71,000 scf of N2.

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
KB - GL	0	10	out water, cour, our and de
sand, shale	10	1406	1/2" stream H2O @ 86'; 3/4" stream
little lime	1406	1422	H20 @ 361'; 1 3/4" stream H20 @
sand, shale, redrock	1422	1467	920'; 2 3/4" stream H20 @ 950'
big lime	1467	1524	coal @ 190'; 697'; 770'
big injun	1524	1630	Coal e 190., 097; 770
sand, shale	1630	1966	lgas @ 1675'; 4/10 = 1"w/H20
50 foot	1966	2014	Bas 6 10/3 , 4/10 - 1 W/H20
sand, shale	2014	2017	
30 foot	2017	2034	
sand, shale	2034	2130	ana 6 20001 - 4/10 - 111-/1100
gordon stray	2130	2136	gas @ 2080'; 4/10 = 1"w/H20
sand, shale	2136	2146	
gordon	2146	2160	
sand, shale	2160	2302	A 22671 . / /20 18 /***
4th sand	2302	2302	gas @ 2267'; 4/10 = 1"w/H20
sand, shale	2325	2353	
4th 'A'	2353	2389	
sand, shale	2389		0.04041 0.400
5th sand	2501	2501	gas @ 2424'; 2/10 = 7"w/H20
sand, shale	2526	2526	
speechley		3090	gas @ $2612'$; $2/10 = 7''w/H20$
sand, shale	3090 3206	3206	
balltown		3293	
sand, shale	3293	3403	gas @ 3304'; 40/10 = 2"w/H20
riley	3403	4374	gas @ 3584'; 42/10 = 2"w/H2O
sand, shale	4374	4440	gas @ 4054'; 36/10 = 2"w/H2O
benson	4440	4592	gas @ 4364'; 40/10 = 2"w/H20
sand, shale	4592	4616	gas @ 4582'; 30/10 = 2"w/H20
•	4616		logger
Sign.			driller
	1		gas @ 4643'; 40/10 = 2"w/H2O
		ſ	gas @ TD; 62/10 = 2" w/H20
		İ	*
	1	ł	
		1	
<i>5</i> ,			

(Attach separate sheets as necessary)

PETROLEUM DEVELOPMENT CORPORATION

Well Operator

By: // 22/45

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including only, encountered in the drilling of a well."

DATE:	10/16/2012	
API#:	47-033-03162	F_

Farm name: Harron, Ray A.	Operator Well	No.: Harron 2		
LOCATION: Elevation: 1249 GL	Quadrangle:	Clarksburg 7.5		· ·
District: Simpson	County: Han	rison		
Latitude: 8,490 Feet South of 39 Deg.	17 Min.		<u> </u>	
Longitude 1,890 Feet West of 80 Deg.				
	•			
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	11 3/4"	15'	15'	Cement to Surface
Agent: Bob Williamson	8 5/8°	1063'	1063'	371
Inspector: Tim Bennett	4 1/2"	4593'	4593'	880
Date Permit Issued: 04/30/2009				
Date Well Work Commenced: 6/17/2009	l			
Date Well Work Completed: 6/18/2009				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig 🗸				
Total Vertical Depth (ft): 4634'				
Total Measured Depth (ft): 4634'				
Fresh Water Depth (ft.): 20', 208', 365'			<u> </u>	
Salt Water Depth (ft.): 936'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 196', 540'				
Void(s) encountered (N/Y) Depth(s) N				
OPEN FLOW DATA (If more than two producing formation 5th Sand Pay Gas: Initial open flow 50.4 MCF/d Oil: Initial open formation MCF/d Final open flow MCF/d Final open flow time of open flow between initial and final tests 24 Static rock Pressure 120 psig (surface pressure) a	zone depth (ft) flowB wBt Bt	2404 Bbl/d bl/d s	lata on separate	shect)
Second producing formation Gordon (perf only) Pay 20	one depth (ft) 20	39		
Gas: Initial open flowMCF/d Oil: Initial open		bl/d	•	
Final open flow MCF/d Final open flo		bl/d -		
Time of open flow between initial and final tests				
I certify under penalty of law that I have personally examined			mation submitte	ed on this document an
all the attachments and that, based on my inquiry of those ind	ividuals immedi	iately responsib	ole for obtaining	the information I belie
that the information is true, accurate, and complete.		•	_	
		10.	/16/2012	
Signature			Date	

Were core samples taken? Yes No XX	ecorded on this well? If yes, please list Hotwell Wireline GR/CCL/CMT Bond VDL
from 2440-850.	ecorded on this weil? If yes, picase list
FRACTURING OR STIMULATING, PHYSIC	HE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, CAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING HE FROM SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulating:	
6/17/2009: MIRU Weatherford & Hotwell Wireline. Run GR/CCL log (rom 2440-850 & set Bridge Plug at 2440, perf. 5th Sand from 2518-26 (16 holes), set frac plug at 2070" &
perf Gordon from 2039-46' w/24 holes RU Weatherford & pur	np 12 bbls 15% HCl ahead of an N2 (35Q) assist linear AquaFrac w/ 25,584 lbs of 20/40 sand,
101,728 SCF N2, & 348 bbls treated fluid. Break at 1989 psi & av	g treating foam rate was 18.4 BPM & ATP was 2351 psi. ISIP = 1554 psi, no other pressures taken.
Did not get acid ahead of 2nd stage due to pump not	being able to pull prime, after several attempts to break the Gordon frac cancelled.
6/25/2009: Drilled 1st plug & 2nd plug & cleaned to c	original TD @ 4574' & TiL on 6/25/2009. Gordon was perforated but never frac'd.
Plug Back Details Including Plug Type and Depth(s):
Bridge plug @ 2440' & frac plug @ 2	070'. Both plugs drilled out & cleaned out to original TD.
Formations Encountered: Surface:	Top Depth / Bottom Depth
See Attached WR-35 & "Well Log" from o	riginal completion of this well (47-033-3162).
See Attached WR-35 & "Well Log" from o	riginal completion of this well (47-033-3162).
See Attached WR-35 & "Well Log" from c	riginal completion of this well (47-033-3162).
See Attached WR-35 & "Well Log" from o	riginal completion of this well (47-033-3162).
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See Attached WR-35 & "Well Log" from o	riginal completion of this well (47-033-3162).

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. Perforated the Benson with 13 shots (4457'-67'). Treated the well using a gelled water frac w/N2 assist using 603 bbl of sand laden fluid (15,000# of 80/100 sand and 50,000# of 20/40 sand). Also used 71,000 scf of N2.

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
	0	10	an sait water, coar, our and gus
KB - GL		1371	11/2" stream H2O @ 20'; 1/2" stream H2O
sand, shale, redrock	10	1448	@ 208'; 'z" stream H20 @ 365'; 1"
big lime	1371		stream H2O @ 936'
sand, shale	1448	1460	
nig injum -	1460	1526	coal @ 196'; 540'
sand, shale	1526	1868	gas @ 1577'; 10/10= 1"w/H20
gantz	1868	1877	1
sand, shale	1877	1884	
50 foot	1884	1930	
sand, shale	1930	1937	
30 foot	1937	1944	
sand, shale	1944	2024	gas @ 1983'; 6/10= 1"w/H20
gordon stray	2024	2045	"
sand, shale	2045	2047	1
gordon	2047	2067	1
sand, shale	2067	2126	
3rd sand	2126	2146	
sand, shale	2146	2197	gas @ 2170'; 4/10= 1"w/H20
4th sand	2197	2217	
sand, shale	2217	2254	gas @ 2233'; 4/10= 1"w/H20
4th 'A'	2254	2289	
sand, shale	2289	2395	gas @ 2326'; 12/10= 1"w/H20
5th sand	2395	2425	gas @ 2420'; 14/10= 1"w/H20
sand, shale	2425	2995	(
	2995	3103	
speechley	3103	3229	gas @ 3196'; 10/10= 1"w/H20
sand, shale	3229	3312	1845 (5150 , 10,10 1 1,120
balltown	3312	4248	gas @ 3414'; 8/10=1" w/H2O
sand, shale	4248	4311	gas @ 4194'; 8/10=1" w/H2O
riley	4248	4437	gas @ 4413'; 18/10=1 "w/H20
sand, shale		4470	gas 6 4415 , 10/10- 1 w/020
benson	4437		1,
sand, shale	4470		logger driller
		4662 TD	gas @ 4507'; 100/10= 1"w/H20
	l		Igas w 450/ ; 100/10- 1 w/n20
	1	1	gas @ TD; 6/10= 2"w/H2O
		1	l ·

(Attach separate sheets as necessary)

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including well, encountered in the drilling of a well."

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	10/16/2012	
API#:	47-033-03388	F

Farm name: Angotti, Michael, Et Al	Operator Well	No.: Jarvis 1	-A			
LOCATION: Elevation:1201' GL	CATION: Elevation: 1201'GL Quadrangle: Clarksburg 7.5					
District: Clark		rison				
Latitude: 8,430 Feet South of 39 Deg.	17 Min.					
Longitude 3,630 Fect West of 82 Deg.	20 Min.		•			
Company: Petrolcum Development Corporation						
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Coment fill up Cu. Ft.		
Bridgeport, WV 26330	11 3/4"	38'	38'	Sanded In		
Agent: Bob Williamson	8 5/8"	1225'	1225'	351		
Inspector: Tim Bennett	4 1/2"	4691'	4691'	748		
Date Permit Issued: 06/06/2007						
Date Well Work Commenced: 7/15/2008						
Date Well Work Completed: 7/18/2008				<u> </u>		
Verbal Plugging:						
Date Pennission granted on:						
Rotary Cable Rig 🗸		· · · · · · · · · · · · · · · · · · ·		·		
Total Vertical Depth (ft): 4743'						
Total Measured Depth (ft): 4743'		,				
Fresh Water Depth (ft.): 990'						
Salt Water Depth (ft.): None Reported						
Is coal being mined in area (N/Y)? N						
Coal Depths (ft.): None Reported						
Void(s) encountered (N/Y) Depth(s) N						
OPEN FLOW DATA (If more than two producing formatio	ns please includ	le additional da	ta on separate sl	neet)		
	one depth (ft)_2		•	·		
Gas: Initial open flow 237 MCF/d Oil: Initial open flo		ol/d				
Final open flow 51 MCF/d Final open flow Time of open flow between initial and final tests	Bbl Hours	Vd				
Static rock Pressure 90 psig (surface pressure) aft		8		•		
Second producing formationPay zon	e depth (ft)					
Gas: Initial open flow MCF/d Oil: Initial open flo			•			
Final open flow MCF/d Final open flow Time of open flow between initial and final tests	Bbi	/d				
Static rock Pressurepsig (surface pressure) aft		\$				
I certify under penalty of law that I have personally examined a	ınd am familiar	with the inform	ation submitted	on this document and		
all the attachments and that, based on my inquiry of those indiv	iduals immedia	tely responsible	for obtaining t	ne information I believe		
that the information is true, accurate, and complete.						
# COO AN		10/1	6/2012			
Signature	-		Date			

per 17 2012

Were core samples taken? YesNo_XX
Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Superior Wireline GR log from 2700' - 1500'.
NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulating:
7/15/2008: MIRU BJ Tools & Superior Wireline. Set a BJ retrievable bridge plug @ 2610' & RD BJ. RU Superior & run a correlation GR & perf the
Fifth Sand with 20 holes from 2535 - 2569. RDMO Superior & RU BJ Services & pumped a N2 assist Lightning 1400 fluid system with 48,000 lbs of 30/50 sand &
534 bbis treated fluid & 89,339 SCF of N2. Break at 2,220 psi & avg. treating foam rate was 17 BPM & ATP was 1,957 psi. ISDP=1990psi, 5 min=1,742 psi.
Plug Back Details Including Plug Type and Depth(s): Retrievable bridge plug at 2610' pulled after job & cleaned to original TD.
Formations Encountered: Top Depth / Bottom Depth Surface:
See Attached WR-35 & "Well Log" from original completion of this well (47-033-3388).

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
lst	BENSON	13 (4585 - 4592)	100	400	500	60

WELL LOG

MATTON COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all freshand salt water, coal, oil and gas
WD 61			
KB - GL	0	10	
sand, shale, RR	10	1562	1/2" stream H2O @ 990
Big Lime	1562	1625	
sand, shale	1625	1630	
Keener	1630	1644	
sand, shale	1644	1649	
Big Injun	1649	1708	
sand, shale	1708	2133	gas check @ 1988' no show
30 ft	2133	2157	
sand, shale	2157	2182	
Gordon Stray	2182	2200	
sand, shale	2200	2215	
Gordon	2215	2248	
sand, shale	2248	2390	
4th	2390	2434	
sand, shale	2434	2470	
4th A	2470	2486	
sand, shale	2486	2540	gas check @ 2516' no show
5th	2540	2575	Bas check 6 2310 HO BHOW
sand, shale	2575	3008	
Upper Speechley	3008	3162	gas check @ 3028' 50/10 - 1" H20
sand, shale	3162	3244	gas check 6 3020 30/10 - 1 H20
Speechley	3244	3385	
sand, shale	3385	3446	
Balltown	3446	3638	gas check @ 3555' 80/10 - 1" H20
sand, shale	3638	3840	Bas check 6 3333 60/10 - 1 H20
Bradford	3840	3924-	· ·
sand, shale	3924	4388	
Riley	4388	4442	
sand, shale	4442	4572	A /FFOL 00/10 - 18 mag
Benson	4572	4594	gas check @ 4553' 80/10 - 1" H20
sand, shale	4594	4743	gas check @ 4647' 10/10 - 2" H20 Driller TD 76/10 - 1" H20
oally bliate	4374	4736	
	I	4/36	Logger TD

(Attach separate sheets as necessary)

	PETROLEUM DEVELOPMENT CORPORATION
We	11 Operator /
By:	/f4//. h —
Date:_	172/87

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including incl., encountered in the drilling of a well."

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	10/16/2012	
API#:	47-033-03404	Ē

Farm name: Lee, Florence G. Et Al	Operator Well	No.: Lee 1		
LOCATION: Elevation: 1337 GL	Quadrangle: _	Clarksburg 7.5		
District: Clark	County: Han	ison		
Latitude: 8,280 Feet South of 39 Deg.	17 Min.	30 Sec	-	
Longitude 2.040 Feet West of 80 Deg.	Min.	Sec	•	
Company: Petroleum Development Corporation				•
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	11 3/4"	290'	290'	351
Agent: Bob Williamson	8 5/8°	1363'	1363'	351
Inspector: Tim Bennett	4 1/2"	4834'	4834'	722
Date Permit Issued: 3-5-2010				
Date Well Work Commenced: 3/15/2010				
Date Well Work Completed: 3/15/2010				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig 🗸				
Total Vertical Depth (ft): 4868				
Total Measured Depth (ft): 4868'				
Fresh Water Depth (ft.): 200', 400'				
Salt Water Depth (ft.): None				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 250-54, 390-94, 1118-20				
Void(s) encountered (N/Y) Depth(s) None	<u> </u>			
OPEN FLOW DATA (If more than two producing formatic Producing formation 5th Sand Pay : Gas: Initial open flow 103 MCF/d Oil: Initial open flow 63 MCF/d Final open flow Time of open flow between initial and final tests 2 Static rock Pressure 70 psig (surface pressure) af	zone dcpth (ft)_ lowBt vBb 24Hours	2701 bl/d l/d	ata on separate s	heet)
Second producing formation Pay 20	ne depth (ft)			
Gas: Initial open flow MCF/d Oil: Initial open fl				
Final open flowMCF/d Final open flow Time of open flow between initial and final tests				
Static rock Pressure psig (surface pressure) al				
I certify under penalty of law that I have personally examined all the attachments and that, based on my inquiry of those indi	and am familiar	with the inform	nation submitte	d on this document and
all the attachments and that, based on my inquiry of those man that the information is true, accurate, and complete.	viduuis inimedii	nery responsibl	e tot oomining	me antormadon i ocilev
Filler		10/1	16/2012	
Signature			Date	

CII I I 77 2

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1), DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANCE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH. Perforated Intervals, Fracturing, or Stimulating: 3/15/2010: MIRU JW Wireline & run GR/CCL log from 4868-2300. Set Bridge Plug at 2750 and RU Halliburton & bullhead 20% HIC Into well & filled hole wiwater to pressure test. Press. test csg to 3500 psi. Test CK. Bleed off pressure & Perforate from 2701-2706 (10) & 2715-2720 (10) (Fifth SS). Halliburton pumped an N2 assist-limit with 32 of 2040 brown sand. Break at 1776 psi & avg treating from met was 19.8 BPM & ATP was 2153 psi. ISIP = 1846psi, 5min = 1971 psi, 10 min = 1448 psi, 15 min = 1305 psi RDMO Halliburton. 3/16/2010: RU EC & RU swab tools and swab to TD and RU to run tubing & release and trip Bridge Plug out. Release Energy Contractors. 4/17/2012: RU PDC Rig #223 & tsg TD at 4800' & swab dry & TIL. Plug Back Details Including Plug Type and Depth(s): Termp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface. See Attached WR-35 & "Well Log" from original completion of this well (47-033-3404).	Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list JW Wireline GR/CCL from 4868-2300.	
FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH. Perforated Intervals, Fracturing, or Stimulating: 3/15/2010: MIRU JW Wireline & run GR/CCL log from 4868-2300. Set Bridge Plug at 2750 and RU Halliburton & bullhead 20% HCl into well & filled hole w/water to pressure test. Press. test csg to 3500 psi. Test OK. Bleed off pressure & Perforate from 2701-2706 (10) & 2715-2720 (10) (Fifth SS).Halliburton pumped an N2 assist X-link with 302 sks of 20/40 brown sand. Break at 1776 psi & any breating foam rate was 19.6 BPM & ATP was 2153 psi. ISIP = 1844psi, 5min = 1571 psi, 10 min = 1448 psi, 15 min = 1305 psi RDMO Halliburton. 3/16/2010: RU EC & RU swab tools and swab to TD and RU to run tubing & release and trip Bridge Plug out. Release Energy Contractors. 4/7/2012: RU PDC Rig #223 & tag TD at 4800' & swab dry & Tit. Plug Back Details Including Plug Type and Depth(s): Temp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface:		
3/15/2010: MIRU JW Wireline & run GR/CCL log from 4868-2300. Set Bridge Plug at 2750 and RU Halliburton & bullhead 20% HCl into well & filled hole w/water to pressure test. Press. test csg to 3500 psi. Test OK. Bleed off pressure & Perforate from 2701-2706 (10) & 2715-2720 (10) (Fifth SS). Halliburton pumped an N2 assist X-link with 302 sks of 20/40 brown sand. Break at 1776 psi & avg treating foam rate was 19.6 BPM & ATP was 2153 psi. ISIP = 1844psi, 5min = 1571 psi, 10 min = 1448 psi, 15 min = 1305 psi RDMO Halliburton. 3/16/2010: RU EC & RU swab tools and swab to TD and RU to run tubing & release and trip Bridge Plug out. Release Energy Contractors. 4/7/2012: RU PDC Rig #223 & tag TD at 4800' & swab dry & Til Plug Back Details Including Plug Type and Depth(s): Temp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface:	FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING	٠.,
20% HCl into well & filled hole w/water to pressure test. Press. test csg to 3500 psi. Test OK. Bleed off pressure & Perforate from 2701-2706 (10) & 2715-2720 (10) (Fifth SS).Halliburton pumped an N2 assist X-link with 302 sks of 20/40 brown sand. Break at 1776 psi & avg treating foam rate was 19.6 BPM & ATP was 2153 psi. ISIP = 1844psi, 5min = 1571 psi, 10 min = 1448 psi, 15 min = 1305 psi RDMO Halliburton. 3/16/2010: RU EC & RU swab tools and swab to TD and RU to run tubing & release and trip Bridge Plug out. Release Energy Contractors. 4/7/2012: RU PDC Rig #223 & tag TD at 4800' & swab dry & TIL. Plug Back Details Including Plug Type and Depth(s): Temp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface:	Perforated Intervals, Fracturing, or Stimulating:	
from 2701-2706 (10) & 2715-2720 (10) (Fifth SS).Halliburton pumped an N2 assist X-link with 302 sks of 20/40 brown sand. Break at 1776 psi & avg treating foam rate was 19.6 BPM & ATP was 2153 psi. ISIP = 1844psi, 5min = 1571 psi, 10 min = 1448 psi, 15 min = 1305 psi RDMO Halliburton. 3/16/2010: RU EC & RU swab tools and swab to TD and RU to run tubing & release and trip Bridge Plug out. Release Energy Contractors. 4/7/2012: RU PDC Rig #223 & tag TD at 4800' & swab dry & TiL. Plug Back Details Including Plug Type and Depth(s): Temp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface:	3/15/2010: MIRU JW Wireline & run GR/CCL log from 4868-2300. Set Bridge Plug at 2750 and RU Halliburton & bullhead	
Bresk at 1776 pei & avg treating foam rate was 19.6 BPM & ATP was 2153 psi. ISIP = 1844psi, 5min = 1571 psi, 10 min = 1448 psi, 15 min = 1305 psi RDMO Halliburton. 3/16/2010: RU EC & RU swab tools and swab to TD and RU to run tubing & release and trip Bridge Plug out. Release Energy Contractors. 4/7/2012: RU PDC Rig #223 & tag TD at 4800' & swab dry & TIL. Plug Back Details Including Plug Type and Depth(s): Temp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface:	20% HCl into well & filled hole w/water to pressure test. Press. test csg to 3500 psi. Test OK. Bleed off pressure & Perforate	
RDMO Halliburton. 3/16/2010: RU EC & RU swab tools and swab to TD and RU to run tubing & release and trip Bridge Plug out. Release Energy Contractors. 4/7/2012: RU PDC Rig #223 & tag TD at 4800' & swab dry & TiL. Plug Back Details Including Plug Type and Depth(s): Temp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface:	from 2701-2706 (10) & 2715-2720 (10) (Fifth SS).Halliburton pumped an N2 assist X-link with 302 sks of 20/40 brown sand.	
Bridge Plug out. Release Energy Contractors. 4/7/2012: RU PDC Rig #223 & tag TD at 4800' & swab dry & TiL. Plug Back Details Including Plug Type and Depth(s): Temp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface:	Break at 1776 psi & avg treating foam rate was 19.6 BPM & ATP was 2153 psi. ISIP = 1844psi, 5min = 1571 psi, 10 min = 1448 psi, 15 min = 1305 psi	
Bridge Plug out. Release Energy Contractors. 4/7/2012: RU PDC Rig #223 & tag TD at 4800' & swab dry & TiL. Plug Back Details Including Plug Type and Depth(s): Temp RBP at 2750' pulled after frac. Formations Encountered: Top Depth / Bottom Depth Surface:	RDMO Halliburton. 3/16/2010: RU EC & RU swab tools and swab to TD and RU to run tubing & release and trip	
Formations Encountered: Top Depth / Bottom Depth Surface:		
Formations Encountered: Top Depth / Bottom Depth Surface:		
Surface:		
	Formations Encountered: Top Depth / Bottom Depth	
	Surface:	

BENSON

1ST

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

80/100 20/40 STAGE FORMATION PERFS SKS

13 (4753 - 4757)

ACID N2 SKS GAL (MCF) 100 500 500 69

648 BRLS SAND LADEN FLUID

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	RMARKS Including indication of all free and salt water, coal, oil and ga
KB - GL		10	
sand, shale, RR	10	1660	1/2" stream H2O @ 200'
Little Lime	1660	1676	1/2" stream H2O @ 400"
sand, shale	1676	1700	1/2 Stream H2O @ 400
Big Lime	1700	1764	
Big Injun	1764	1853	
sand, shale	1853	2202	
Gantz	2202	2214	
50 ft	2214	2260	gas check @ 2281' no show
30 ft	2260	2300	See direct 6 2201 HO SHOW
sand, shale	2300	2334	ı.
Gordon	2334	2408	gas check @ 2406' 6/10 - 1" H20
sand, shale	2408	2590	840 0110011 (120
4th	2590	2640	
sand, shale	2640	2694	·
5th	2694	2732	gas check @ 2720' 6/10 - 1" H20
sand, shale	2732	3289	d
Speechley	3289	3412	·
sand, shale	3412	3534	
Balltown	3534	3626	gas check @ 3588' 18/10 - 2" H2O
sand, shale	3626	3790	3
Bradford	3790	4070	,
sand, shale	4070	4538	gas check @ 4304' 16/10 - 2" H20
Riley	4538	4606	gas check @ 4584' 16/10 - 2" H2O
saṇd, shale	4606	4736	
Benson ;	4736	4788	gas check @ 4772' 26/10 - 2" H20
sand, shale	4788	4868	Driller TD 12/10 - 2" H20
		4864	Logger TD
		1	
		1	±1
		1	
		1	
		1	
		1	
		1	

(Attach separate sheets as necessary)

EVELOPMENT (ORP.

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including wal, encountered in the arilling of a well."

DATE:	10/16/2012	
API #:	47-033-03480	F

Farm name: Larosa, James	_ Operator Wel	l No.: Yates 1		
LOCATION: Elevation: 1147 GL	Quadrangle: _	Clarksburg 7.5		
District: Simpson	County: Har	rison		
Latitude: 5,780 Feet South of 38 Deg			·	
Longitude 4,180 Feet West of 80 De		. 00 Sec		
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	11 3/4"	32'		
Agent: Bob Williamson	8 5/8"	921'	921'	295
Inspector: Tim Bennett	4 1/2"	4634'	4634'	653
Date Permit Issued: 02/19/2010				
Date Well Work Commenced: 03/09/2010				
Date Well Work Completed: 03/10/2010				
Verbal Plugging:				
Date Permission granted on:	1			
Rotary Cable Rig	 	 `		
Total Vertical Depth (ft): 4663'		<u> </u>		
Total Measured Depth (ft): 4663'			<u> </u>	1
				
			 	
Salt Water Depth (ft.): None Recorded			 	
Is coal being mined in area (N/Y)? N			 	
Coal Depths (ft.): 349-51, 445-47, 543-46				
Void(s) encountered (N/Y) Depth(s) N		<u> </u>		
	zone depth (ft)	de additional d	ata on separate s	heet)
Gas: Initial open flow 84 MCF/d Oil: Initial open		bl/d		
Final open flow 146 MCF/d Final open flor Time of open flow between initial and final tests		ol/d		
Static rock Pressure NT psig (surface pressure)				•
,				
Second producing formation Fifth Sand (commingled) Pay 2				
Gas: Initial open flow MCF/d Oil: Initial open Final open flow MCF/d Final open flow		bl/ d - ol/d		
Time of open flow between initial and final tests	Hours	-		
Static rock Pressure psig (surface pressure)	afterIlou	rs		
I wife and a second of the sec	d d &:::-		ili	
I certify under penalty of law that I have personally examined all the attachments and that, based on my inquiry of those inc				
that the information is true, accurate, and complete.		,p	········· ·	
200 Julia			Icmoso	
Signature			06/2012 Date	
Signature				

Were core samples taken? Y	/csNo_XX	Were cuttings caught dur	ing drilling? YesNo_XX
Were Electrical, Mechanical o	or Geophysical logs recorded or	n this well? If yes, please list	
DETAILED GEOLOGICA	LATING, PHYSICAL CHA L RECORD OF THE TO	NGE ETC 2) THE WELL I	F PERFORATED INTERVALS, OG WHICH IS A SYSTEMATIC L FORMATIONS, INCLUDING IH.
Perforated Intervals, Fracturing	g, or Stimulating:		
3/9/2010: MIRU JW Wireline and Hall:burtonJW	ran a gamma/ccl log to correlate. Run in hole s	with 4-1/2" composite bridgeplug. Set plug @ 42	30" Halliburion bulihoaded 15% HCI acid into well and
filled hole with water to pressure test. Press	sure lested casing to 3500 psi. Well held pr	essure. JW shot the RILEY formation with the	following shots(HSC): 10 (4189-93") & 6 (4182-85").
Hatibutton completed the RILLY formation. The formation w	rae ready light, pumped near max cosing practices entire job	nthous incidens. Job could not be pumped according to schedul	ie The Job was a NZ ASSIS1, X-LBM (with -100) feam) with 25 sks of
100 mesh and 78 sits of 20/40 mesh white ser	nds. The breakdown pressure was 3258 psi,	The well treated at an average foam rate of 14.7	bpm with an average treating pressure of 3286 psi.
The final pressures were as follows: ISIP: 231	9 psi, 2 min shut-in: 2076 psi, 5 min shut-in: 1	985 psi, 10 min shut-in: 1937 psi, 15 min shut-in:	1908 psi Spotted acid and flushed for second stage
JW set a 4-1/2** composite flow-through fro	acplug. Set plug @ 2410'. Chased the fra	ball to plug and shot The 5TH SAND forms	tion with the following shots(HSC): 18 (2374-80").
Plug Back Details Including Pl	lug Type and Depth(s): Halliburte	un completed the 5TH SAND formation. Pur	mped more sand than original design due to the
way zone was treating. The job was a	N2 ASSIST, X-LINK with 330 sks of 2	0/40 mesh white sand. The breakdown	pressure was 1746 psi. The well treated ***
			The state of the s
Formations Encountered: Surface:	Тор	Depth /	Bottom Depth
			100 00 400)
See Attached WR-35 & "\	Well Log" from original co	impletion of this well (47-0	133-03480).
See Attached WR-35 & "\	Well Log" from original co	ompletion of this well (47-0	133-03480).
See Attached WR-35 & "	Well Log" from original co	empletion of this well (47-0	33-03480).
See Attached WR-35 & "\	Well Log" from original co	empletion of this well (47-0	
See Attached WR-35 & "	Well Log" from original co	empletion of this well (47-0	33-03480).
See Attached WR-35 & 9	Well Log" from original co	empletion of this well (47-0	
See Attached WR-35 & "	Well Log" from original co	empletion of this well (47-0	33-03480).
			o final pressures were as follows:
***at an average foam rate of 2	21.4 bpm with an average trea	ating pressure of 2232 psi. The	
***at an average foam rate of 2	21.4 bpm with an average trea	ating pressure of 2232 psi. The	o final pressures were as follows:
***at an average foam rate of 2	21.4 bpm with an average trea	ating pressure of 2232 psi. The	o final pressures were as follows:
***at an average foam rate of 2	21.4 bpm with an average trea	ating pressure of 2232 psi. The	o final pressures were as follows:

Yates #1

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
1ST	Benson	11 (4522-4524)	100	500	500	67

WELL LOG

ORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
B - GL	ì		The fact of the fa
and, shale, RR	10	10 1260	•
ittle Lime	1260	1275	3/4" stream H2O @ 155'
and, shale	1275	1308	COAL 349-351: 445-447
ig Lime	1308	1372	3/4" stream H2O @ 446'
eener	1372	1418	Coal 543-546
ig Injun	1418	1468	gas chk @ 1406' 6/10-7" H20
and, shale	1468	1804	948 CDK # 1466/ 9/10_9# #6/
antz	1804	1818	gas chk @ 1776' 6/10-7" H20
and, shale	1818	1832	
oft	1832	1880	
and, shale) ft	1880	1889	
and, shale	1889	1912	gas chk @ 1901' 4/10-7" H2C
ordon Stray	1912	1990	945 Cit 6 1901, 4/10-4, H2C
and, shale	1990	2003	<u>-</u>
ordon	2003	2013	
ind, shale	2013	2043	gas chk @ 2024' 4/10-7" H20
d lare	2043	2154	3-2 cmr 6 5054, 4/102/" H50
nd, shale	2154	2190	gas chk @ 2179' 24/10-2" Hg
h	2190	2213	2 r G 21/2 24/10-5" ud
nd, shale	2213	2245	
h .	2245	2347	
nd, shale	2347	2380	gas chk @ 2364' 22/10-2" Hg
eechlev	2380 2798	2798	
nd, shale	3123	3123	gas chk @ 2895' 20/10-2" Hg
lltown	3135	3135	948 CDK B 3049' 20/10-28 tra
nd, shale	3454	3454 3632	gas chk @ 3360' 12/10-2" Hg
adford	3632	3719	
nd, shale	3719	4173	
ley	4173	4372	man able 4 sacs services
nd, shale	4372	4512	gas chk @ 4261' 15/10-2" Hg
nson	4512	4570	gas chk @ 4415' 14/10-2" Hg
nd, shale	4570	4662	gas chk @ 4569' 14/10-2" Hg
	4662	4662	Driller MD 14/16 an m
			Driller TD 14/10-2" Hg Collars 14/10-2" Hg
	ì	4663	Logger TD
·	ŀ		33 10
4			

(Attach separate sheets as necessary)

PETROLEUM DEVELOPMENT CORPORATION

Date: April 18, 1989

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including well, encountered in the drilling of a well."

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	10/16/2012	j	
API#:	47-033-03797	W	-

ON: Elevation: 1343' GL	Quadrangle:	Brownton 7.5		
District: Elk	County: Ham	ison		
Latitude: 10,700 Feet South of 39 Deg.	12 Min.			-
Longitude 9,950 Feet West of 80 Deg.	<u>12</u> Min.	30 Sec.		
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	11 3/4"	22'	0	
Agent: Bob Williamson	8 5/8*	1341'	1341'	386
Inspector: Tim Bennett	4 1/2"	4647'	4647'	634
Date Permit Issued: 03/23/2009			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
Date Well Work Commenced: 8/19/2009				
Date Well Work Completed: 8/19/2009				
Date Well Work Completed.				
Verbal Plugging:				1
Date Permission granted on:				
Rotary Cable Rig V				
Total Vertical Depth (ft): 4685'				
Total Measured Depth (ft): 4685'				
Fresh Water Depth (ft.): 165'				
Salt Water Depth (ft.): None Reported				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 98-102, 267-71, 520-25, 892-96, 1037-40				
Void(s) encountered (N/Y) Depth(s) N				
ras: Initial open flow 750 MCF/d Oil: Initial open flow 193 MCF/d Final open flow	one depth (ft) 2 owBb	2644 bl/d l/d	ita on separate s	sheet)
Time of open flow between initial and final tests	Hours er 72 Hour		and the	
econd producing formation 5th Sand (commingled) Pay zon	ne depth ((t) 258	34		* * * * * * * * * * * * * * * * * * *
ias: Initial open flow MCF/d Oil: Initial open flow	•	bl/d		
ias: mittai open nowiwic r/a On. mittai open n	Bb			
Final open flow MCF/d Final open flow				
- · · · · · · · · · · · · · · · · · · ·				

Signature

Date

Were core samples taken? YesNoXX					3/1/
NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH. Perforated Intervals, Fracturing, or Stimulating: 8/19/2009: MIRU JW Wireline & run GR/CCL log from 3200-1800. Set SBP @ 2680' & RU BJ & bullhead 20% HCl in front of treated water & pressure test casing to 3486 psi. Held OK. Bleed off pressure & RU JW & perforate 12 holes from 2644-50 @ 2 SPF. RU BJ pumped a 30 Q N2 assist X-link with 15,989 lbs of 20/40 sand & 323 bbls treated fluid & 120.6 MSCF of N2. Break at 4117 psi & avg treating foam rate was 24 BPM & ATP was 2914 psi. Well acreened out. ROMO BJ & JW. 8/20/2009: RU EC Rig & clean send to below parfs. Set CBP et 2610'. Spot tubing for 2nd zone. BJ RU & spot 12 bbls acid over upper zone. EC pulled thg & RU JW & perf 2584-92 w/16 holes. RDMO BJ 8/25/2009: RU Universal & pumped a 30 Q N2 assist X-link with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi. Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth / Bottom Depth Surface:	Were core samples taken? YesNo_XX	Were c	uttings caught duri	ng drilling? Yes	_ No_XX
FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH. Perforated Intervals, Fracturing, or Stimulating: 8/19/2009: MIRU JW Wireline & run GR/CCL log from 3200-1800. Set SBP @ 2680' & RU BJ & bullhead 20% HCl in front of treated water & pressure test casing to 3486 psi. Held OK. Bleed off pressure & RU JW & perforate 12 holes from 2644-50 @ 2 SPF. RU BJ pumped a 30 Q N2 assist X-link with 15,989 lbs of 20/40 sand & 323 bbls treated fluid & 120.6 MSCF of N2. Break at 4117 psi & avg treating foam rate was 24 BPM & ATP was 2914 psi. Well screened out. ROMO BJ & JW. 8/20/2009: RU EC Rig & clean sand to below perfs. Set CBP at 2610'. Spot tubing for 2nd zone. BJ RU & spot 12 bbls acid over upper zone. EC pulled tbg & RU JW & perf 2584-92 w/16 holes. RDMO BJ.8/25/2009: RU Universat & pumped a 30 Q N2 assist X-link with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi. Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth / Bottom Depth Surface:	Were Electrical, Mechanical or Geophysical logs recor	ded on this well? If	yes, please list_JW	Wireline GR/CCL from	3200 - 1800.
8/19/2009: MIRU JW Wireline & run GR/CCL log from 3200-1800. Set SBP @ 2680' & RU BJ & bullhead 20% HCl in front of treated water & pressure test casing to 3486 psi. Held OK. Bleed off pressure & RU JW & perforate 12 holes from 2644-50 @ 2 SPF. RU BJ pumped a 30 Q N2 assist X-link with 15,989 lbs of 20/40 sand & 323 bbls treated fluid & 120.6 MSCF of N2. Break at 4117 psi & avg treating foam rate was 24 BPM & ATP was 2914 psi. Well screened out. RDMO BJ & JW. 8/20/2009: RU EC Rig & clean sand to below perfs. Set CBP at 2610'. Spot tubing for 2nd zene. BJ RU & spot 12 bbls acid over upper zone. EC pulled tbg & RU JW & perf 2584-92 w/16 holes. RDMO BJ.8/25/2009: RU Universal & pumped a 30 Q N2 assist X-link with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi. Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth Bottom Depth Surface:	FRACTURING OR STIMULATING, PHYSICAL DETAILED GEOLOGICAL RECORD OF THE	CHANGE, ETC. 2 E TOPS AND BO). THE WELL L TTOMS OF AL	OG WHICH IS A SY L FORMATIONS,	YSTEMATIC
& pressure test casing to 3486 psi. Held OK. Bleed off pressure & RU JW & perforate 12 holes from 2644-50 @ 2 SPF. RU BJ pumped a 30 Q N2 assist X-link with 15,989 lbs of 20/40 sand & 323 bbls treated fluid & 120.6 MSCF of N2. Break at 4117 psi & avg treating foam rate was 24 BPM & ATP was 2914 psi. Well screened out. RDMO BJ & JW. 8/20/2009: RU EC Rig & clean sand to below perfs. Set CBP at 2610'. Spot tubing for 2nd zone. BJ RU & spot 12 bbls acid over upper zone. EC pulled tbg & RU JW & perf 2584-92 w/16 holes. RDMO BJ.8/25/2009: RU Universal & pumped a 30 Q N2 assist X-link with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi. Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth / Bottom Depth Surface:	Perforated Intervals, Fracturing, or Stimulating:				
RU BJ pumped a 30 Q N2 assist X-link with 15,989 lbs of 20/40 sand & 323 bbls treated fluid & 120.6 MSCF of N2. Break at 4117 psi & avg treating foam rate was 24 BPM & ATP was 2914 psl. Well screened out. RDMO BJ & JW. 8/20/2009: RU EC Rig & clean sand to below perfs. Set CBP at 2810'. Spot tubing for 2nd zone. BJ RU & spot 12 bbls acid over upper zone. EC pulled tbg & RU JW & perf 2584-92 w/16 holes. RDMO BJ.8/25/2009: RU Universal & pumped a 30 Q N2 assist X-link with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi. Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth / Bottom Depth Surface:	8/19/2009: MIRU JW Wireline & run GR/CCL log from 320	0-1800. Set SBP @ 20	880' & RU BJ & bull	head 20% HCl in front of	of treated water
foam rate was 24 BPM & ATP was 2914 psi. Well screened out. ROMO BJ & JW. 8/20/2009: RU EC Rig & clean sand to below perfs. Set CBP at 2610'. Spot tubing for 2nd zone. BJ RU & spot 12 bbls acid over upper zone. EC pulled tbg & RU JW & perf 2584-92 w/16 holes. RDMO BJ.8/25/2009: RU Universal & pumped a 30 Q N2 assist X-link with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi. Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth / Bottom Depth Surface:	& pressure test casing to 3486 psi. Held OK. Bleed	i off pressure & RU	JW & perforate 1	2 holes from 2644-5	0 @ 2 SPF.
BJ RU & spot 12 bbls acid over upper zone. EC pulled tbg & RU JW & perf 2584-92 w/16 holes. RDMO BJ.8/25/2009: RU Universal & pumped a 30 Q N2 assist X-link with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi. Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth / Bottom Depth Surface:	RU BJ pumped a 30 Q N2 assist X-link with 15,989 lbs of 20/40) sand & 323 bbls treate	d fluid & 120.6 MSCF	of N2. Break at 4117 ps	i & avg treating
with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCF of N2. Break at 2278 psi & avg treating foam rate was 18.9 BPM & ATP was 2754 psi. Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth / Bottom Depth Surface:	foam rate was 24 BPM & ATP was 2914 psi. Well screened out. RDMO BJ	& JW. 8/20/2009: RU EC R	g & clean sand to below (perfs. Set CBP at 2610'. Spot I	lubing for 2nd zone.
Plug Back Details Including Plug Type and Depth(s): BP's at 2680 & 2610 were drilled out & hole cleaned to original TD. Formations Encountered: Top Depth / Bottom Depth Surface:	BJ RU & spot 12 bbls acid over upper zone. EC pulled tbg & RU JW &	perf 2584-92 w/16 holes.	RDMO BJ.8/25/2009: R	U Universal & pumped a 30	Q N2 assist X-link
Formations Encountered: Top Depth / Bottom Depth Surface:	with 216 sx of 20/40 sand & 575 bbls treated fluid & 120.0 MSCI	F of N2. Break at 2278 p	si & avg treating foam	rate was 18.9 BPM & AT	P was 2754 psi.
Surface:	Plug Back Details Including Plug Type and Depth(s):	BP's at 2680 & 26	10 were drilled o	ut & hole cleaned to	o original TD.
Surface:					
Surface:					
	Formations Encountered:	Top Depth		Bottom 1	<u>Depth</u>
See Attached WR-35 & "Well Log" from original completion of this well (47-033-3797).	Surface:				
See Attached WR-35 & "Well Log" from original completion of this well (47-033-3797).					
	See Attached WR-35 & "Well Log" from orig	inal completion o	of this well (47-	033-3797).	
					1
					:
				·	*************************************
					
					i

Stuart #4

STAGE	E FORMATION PERFS		80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
1ST	Benson	13 (4569-4572)	. 0	600	500	85

WELL LOG

FORMATION	TOP FEET	BOTTOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
			milling comp, oth a cap
KB - GL	0	10	
sand, shale, RR	10	1614	1/2" Stream H2O @ 165'
Little Line	1614	1639	Coal 98-102;267-271
sand, shale	1639	1673	Coal 520-525;892-896
Big Lime	1673	1749	Coal 1037-1040
Big Injun	1749	1835	
and, shale	1835	2034	gas chk @ 1883' No Show
intz	- 2034	2052	•
nd, shale	2052 ·	2073	
. ft	2073	2128	
and, shale	2128	2137	gas chk @ 2069' No Show
30 ft	2137	2167	-
sand, shale	2167	2301	gas chk @ 2224' No Show
Gordon	2301	2329	•
sand, shale	2329	2449	gas chk @ 2349' No Show
4th	2449	2532 .	_
sand, shale	2532	2574	gas chk @ 2537' No Show
5th_	2574	2612	-
sand, shale	2612	2642	
Bayard	2642	2654	x
sand, shale	2654	2932	•
Speechley	2932	3344	gas chk @ 3291' No Show
sand, shale	3344	3411	
Balltown	3411	3760	gas chk @ 3664' No Show
sand, shale	3760	3782	
Bradford	3782		gas chk @ 3850' No Show
sand, shale	3880	4276	
Riley	4276	4446	gas chk @ 4417' No Show
sand, shale	4446	4548	gas chk @ 4508' No Show
Benson	4548	4544	gas chk @ 4603' 40/10-1"H20
sand, shale	4544	4700	Drillers TD No Show DC's 12/10-1"H2O
		4685	Logger TD

DATE:	10/16/2012	
API#:	47-033-03938	F

Farm name:_ Bland, Franklin D.	Operator Wel	l No.: Martin 1		
LOCATION: Elevation: 1116 GL	_ Quadrangle: _	Wolf Summit 7	.5	························
District: Tenmile	County: Hai	rison		
Latitude: 150 Feet South of 39 Deg.		Se	с.	
Longitude 6.850 Feet West of 80 Deg.	Min	. <u>30</u> Se	c.	
Company: Petroleum Development Corporation				
120 Ganacis Rouleumed	Casing &	Used in	Left in well	Cement fill
Address:	Tubing	drilling	-	up Cu. Ft.
Bridgeport, WV 26330 Agent: Bob Williamson	11 3/4"	37'	0	270
rigent.	8 5/8" 4 1/2"	975'	975'	372
Inspector: Tim Bennett	4 1/2	5039'	5039'	785
Date Permit Issued: 4/30/2009	 	<u> </u>	 	
Date Well Work Commenced: 3/12/2009				-
Date Well Work Completed: 8/12/2009				
Verbal Plugging:		 	-	
Date Permission granted on:				
Rotary Cable Rig 🗸				
Total Vertical Depth (ft): 5157'	<u> </u>			
Total Measured Depth (ft): 5157'	<u> </u>	ļ	<u> </u>	
Fresh Water Depth (ft.): 45'				
Salt Water Depth (ft.): None Reported				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 42-45, 190-193				·
Void(s) encountered (N/Y) Depth(s) N				
OPEN FLOW DATA (If more than two producing formation Producing formation Pay Gas: Initial open flow Show MCF/d Oil: Initial open flow MCF/d Final open flow Time of open flow between initial and final tests Static rock Pressure NT psig (surface pressure) a	zone depth (ft) flow Vapor E W B Hour	3474 Bbl/d bl/d s	data on separate :	sheet)
Second producing formation Gordon (comingled) Pay 20		488		
Gas: Initial open flow Show MCF/d Oil: Initial open Final open flow MCF/d Final open flow		Bbl/d		
Final open flow MCF/d Final open flo Time of open flow between initial and final tests	WB Hour	bl/d s		
Static rock Pressurepsig (surface pressure) a				
I certify under penalty of law that I have personally examined	l and am familia	r with the info	mation submitte	d on this document a
all the attachments and that, based on my inquiry of those ind				
that the information is true, accurate, and complete.				Property of the Control
To Milli		10	/16/2012	
Signature			Date	

Were core samples taken? Yes	_{No_} XX	Were	cuttings caught duri	ing drilling? Yes	No_XX
Were Electrical, Mechanical or Geo	physical logs recore	ded on this well?	If yes, please list_JW	/ Wireline GR/CCL fro	m 3800-1800.
NOTE: IN THE AREA BELG FRACTURING OR STIMULAT DETAILED GEOLOGICAL RI COAL ENCOUNTERED BY TH	ING, PHYSICAL ECORD OF THE	CHANGE, ETC E TOPS AND B	. 2). THE WELL L OTTOMS OF AL	OG WHICH IS A S L FORMATIONS,	YSTEMATIC
Perforated Intervals, Fracturing, or S	Stimulating:				
3/12/2009: MIRU JW Wireline & run GR/CCL	log from 3800-1800 &	set BP at 3520. RU B.	I & pump acid/water ⩽	t csg to 3489 psi & OK. Rt	JW & TIH & perf
3474-78 & 3496-3502 @ 2 SPF (20 holes). F	RU BJ & pumped an N2	? (35Q) assist linear ge	el w/ 13,218 lbs of 20/40 s	sand, 959 MSCF N2, & 28	bbls treated fluid.
Break at 2054 psi & avg treating foam rate	was 22.6 BPM & ATP	was 2356 psi. ISIP	= 1556 psi, 5min = 1478	psi, 10 min = 1467 psi, 1	5 min = 1461 psi.
RU JW & sel 2nd BP @2715. RD JW & RU BJ	& pump acid/water & tes	st csg to 3588 psi & OK	. RD 8J & RU JW & perf 1	8 holes at 2685-91 & 20 hole	es from 2486-2500.
RD JW & RU BJ & pumped an N2 (35Q) assist	linear gel w/ 6,245 lbs o	of 20/40 sand, 798 MSC	F N2, & 182 bbis treated t	fluid.Break at 2551 psi & av	treating foam rate
was 20 BPM & ATP was 2927 psi. We	Il screened out. RD	MO BJ & JW. 8-13-	2009: MIRU EC rig a	nd clean to original TD	& drill out BP's.
Plug Back Details Including Plug T	ype and Depth(s):				
Drillable BP's at 3520 & 2	715. Remove	d from hole to	o original TD @	<u>)</u> 4999'.	
Formations Encountered: Surface:		Top Depth	/ 	Bottom	<u>Depth</u>
See Attached WR-35 & "Well	Log" from origi	inai compietior	i oi inis well (47-	033-3936).	
·					
			www.ministanie.com/White.com/		
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. 4					
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				* · · · · · · · · · · · · · · · · · · ·	

MARTIN #1

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
1ST	Benson	13 (4923'- 4926')	50	400	500	·56

WELL LOG

FORMATION	TOP FEET BOT	TOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
KB - GL	. 0	10	
sand, shale, RR	10	1457	1/2" water @45'
Maxton	1457	1501	
sand, shale	1501	1895	Coal 42'- 45',190'- 193'
Big Lime	1895	1960	gas chk @ 1707' No Show
sand, shale	1960	1963	
Big İnjun	1963	2040	
sand, shale	2040	2376	gas chk @ 2108' No Show
Gantz	2376	2405	
sand, shale	2405	2476	
Fifty Foot	2476	2505	gas chk @ 2538' No Show
sand, shale	2505	2644	gas chk @ 2630' No Show
Gordon	2644	2704	gas chk @ 2691' 6/10 -1" w/water
sand, shale	2704	2758	- · · · · · · · · · · · · · · · · · · ·
5th	2758	2794	
sand, shale	2794	3269	gas chk @ 3001' 16/10 -1" w/water
Warren	3269	3348	
sand, shale	3348	3452	
Speechley	3452	3742	gas chk @ 3619' 6/10 -1" w/water
sand, shale	3742	3775	
Balltown	3775	4162	
sand, shale	4162	4172	
Bradford	4172	4274	
sand, shale	4274	4697	
Riley	4697	4880	
sand, shale	4880	4917	
Benson	4917	4960	gas chk @ 5012′ 30/10 -1" w/water
sand, shale	4960	5157	Driller TD
		5157	Logger TD
			gas chk @ TD 18/10 -1" w/water

DATE:	10/16/2012	
API#:	47-033-03978	F

Min. 30 S	ec. ec.	Nagaranian .
Min. 00 S Min. 30 S		
	ec.	
& Used in	Left in well	Cement fill
drilling	<u> </u>	up Cu. Ft.
3/4" 37'	0,	
/8" 976'	976'	307
/2" 4421'	4421'	453
		1
		1
		
		
		-
	_	
e include additional th (ft) 2422 Bbl/d Bbl/d Hours Hours	•	persout to stip
(ft)	COT	17 2012
Bbl/d	VC	e e e e e e e e e e e e e e e e e e e
Bbl/d		
Hours		en en en en en en en en en en en en en e
_Hours	100 4 2 2 1	
amiliar with the info nmediately responsi	rmation submitted ble for obtaining t	on this document and the information I believed
i	mmediately responsi	amiliar with the information submitted mmediately responsible for obtaining to 10/16/2012

Were core samples taken? Yes_	No	Were cutting	s caught during drilling	YesNo_XX
Were Electrical, Mechanical or Ge	ophysical logs recorde	d on this well? If yes, p	lease list	
NOTE: IN THE AREA BEI FRACTURING OR STIMULA DETAILED GEOLOGICAL F COAL ENCOUNTERED BY T	TING, PHYSICAL C RECORD OF THE	HANGE, ETC. 2). TH TOPS AND BOTTOM	E WELL LOG WHIC AS OF ALL FORM	H IS A SYSTEMAT
Perforated Intervals, Fracturing, or	•			
1/20/2008: MIRU Weatherford Servic Perforated the 5th SAND formation:				
37,647 (bsof 30/50 Sand, 41 bbl of flush.			· · · · · · · · · · · · · · · · · · ·	
min SIP – 1576 psi. RDMC)		·	
			1-71111	
Plug Back Details Including Plug	Type and Depth(s): Re	trievable frac plug set at	2460', retrieved after job	& cleaned to TD at 43
Formations Encountered:		Top Depth	1	Bottom Depth
Surface:				
See attached original 47-033	3-03978 Pg. 2 "We	Il Log" from WR-35	•	
		- 1		
			The Marian Control of the Control of	
				007 17 202
				007 17 200
				007 27 200

Davis #1

3TAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
LST	Benson	16(4294-4298)	10	450	500	62

WELL LOG

FORMATION		TOP FEET E	SOTTOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
KB - GL		0	10	
sand, shale,	RR	10	1245	1/2" stream H2O @ 50'
Little Lime		1245	1262	1" stream H2O @ 115'
sand, shale		1262	1301	Coal 482-484
3ig Lime		1301	1376	
3ig Injun		1376	1460	
sand, shale	•	1460	1783	gas chk @ 1502' No Show
50 ft		1783	1832	gas chk @ 1749' 2/10-1" H2O
sand, shale		1832	1857	, , , , , , ,
30 ft		1857		
sand, shale		1894	1920	
3rd		1920		
sand, shale		1952	1970	
Jordon		1970	1992	
sand, shale		1992	2142	gas chk @ 2030' 2/10-1" H20
4th		2142	2235	_,
sand, shale		2235	2280	
5th		2280	2312	
sand, shale		2312	2718	
Speechley		2718	3057	gas chk @ 2374' 8/10-1" H2O
sand, shale		3057	3101	, , , , , , , , , , , , , , , , , , , ,
3alltown		3101	3395	gas chk @ 3117' 6/10-1" H2O
sand, shale		3395	3541	gas chk @ 3425' 6/10-1" H20
3radford		3541	3631	,
sand, shale		3631	4111	gas chk @ 3828' 4/10-1" H2O
Riley		4111	4150	
sand, shale		4150	4284	gas chk @ 4263' 8/10-1" H2O
3enson		4284	4330	gas chk @ 4325' 8/10-2" H2O
sand, shale		4330	4449	,
•		4449	4449	Driller TD 8/10-2" H20 DC's 6/10-2" H20
·			4438	Logger TD

DATE:	10/16/2012	1
API#:	47-033-04018	T_{-}

Farm name: Nazarene Church - Clarksburg	Operator Wel	No.: Davis 2		orași andreio de la companio de la c
LOCATION: Elevation: 1074 GL	_ Quadrangle: _	Mount Clare 7.5		
District: Clark	County: Har	rison		
Latitude: 2,675 Feet South of 39 Deg.	15 Min			
Longitude 2,575 Feet West of 80 Deg		Sec		
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	11 3/4"	42'	42'	Sanded In
Agent: Bob Williamson	8 5/8"	1071'	1071'	354
Inspector: Tim Bennett	4 1/2"	4435'	4435'	701
Date Permit Issued: 12/08/2009				
Date Well Work Commenced: 03/02/2010				
Date Well Work Completed: 03/02/2010				
Verbal Plugging:	•			
Date Permission granted on:				
Rotary Cable Rig 🗸				
Total Vertical Depth (ft): 4470'				
Total Measured Depth (ft): 4470'				
Fresh Water Depth (ft.): 66', 720'				
Salt Water Depth (ft.): None Reported				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 18-21, 114-117				
Void(s) encountered (N/Y) Depth(s) N				
OPEN FLOW DATA (If more than two producing formation 5th Sand Pay Gas: Initial open flow Show MCF/d Oil: Initial open	zone depth (ft)	2266'	ata on separate s	sheet)
Final open flow 223 MCF/d Final open flo		ol/d	10 m	
Time of open flow between initial and final tests				
Static rock Pressure NT psig (surface pressure) a	ıfterHou	rs		
Second producing formation Pay 20	one depth (ft)		\$ -	$\mathcal{A}_{k} = \mathcal{A}_{k}$
Gas: Initial open flow MCF/d Oil: Initial open	flowB	bl/d		•
Final open flowMCF/d Final open flo		ol/d		
Time of open flow between initial and final tests				
Static rock Pressurepsig (surface pressure) a	ıfterHou	rs		
I certify under penalty of law that I have personally examined				
all the attachments and that, based on my inquiry of those ind	ividuals immedi	ately responsib	le for obtaining	the information I believe
that the information is true, accurate, and complete.				
- Wills		10/	16/2012	
Signature		· —	Date	

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list
NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulating:
03/02/2010: MIRU Pioneer Wireline & run GR correl. log from 2400' - 2000'. Set Bridge plug at 2330' and perforate the Fifth Sand at 2266'-70' (10 holes) &
2284'-92' (16 holes). RD Pioneer & MIRU Halliburton & pump acid & fluid & test plug to 3605 psi. Plug held OK. Pump a N2 assist
X-Link system w/ 303 sks of 20/40 mesh sand, 509 bbls treated fluid, & 103,387 scf of N2. Break at 2099 psi,
treating at an avg foam rate of 20.6 bpm w/avg TP at 2,448 psi. ISIP = 2,067 psi, 5 min. = 1,909 psi, 10 min
= 1,842 psi, & 15 min shut-in = 1,792 psi. RDMO. 3/3/2010: MIRU Energy Contractors Rig & drill out plug & continue to
original TD at 4399' & clean hole & dry up hole. TOOH & RDMO Energy Contractors.
Plug Back Details Including Plug Type and Depth(s):
Bridge plug set at 2330' for frac, drilled out & cleaned to original TD @ 4399'.
Formations Encountered: Top Depth / Bottom Depth Surface:
See Attached WR-35 & "Well Log" from original completion of this well (47-033-04018).

D. H. DAVIS #2

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
lst	Benson	16 (4306' - 4310')	50	500	500	77

WELL LOG

FORMATION	TOP FEET BOT	TOM FEET	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
KB - GL	0	10	1/2" stream H2O @ 66'
sand, shale, RR	10	1250	3/4" stream H2O @ 720'
Little Lime	1250	1270	Coal 18'-21',114'-117'
sand, shale	1270	1292	, , , , , , , , , , , , , , , , , , , ,
Big Lime	1292	1350	
sand, shale	1350	1360	•
Big İnjun	1360	1462	
sand, shale	1462	1751	gas chk @ 1472' no show
Gantz	1751	1772	gas chk @ 1785' no show
sand, shale	1772	1784	8 C 2
50'	1784	1822	
sand, shale	1822	1838	
30'	1838	1878	gas chk @ 1909' no show
sand, shale	1878	1970	B (2 2
Gordon	1970	1995	gas chk @ 2004' no show
sand, shale	1995	2042	gas chk @ 2158' no show
4th Sand	2042	2205	5 5 1 2
sand, shale	2205	2280	gas chk @ 2315' 32/10 - 2"/H20
5th Sand	2280	2310	gas chk @ 3128' 14/10 - 2"/H20
sand, shale	2310	2372	5
Bayard	2372	2395	gas chk @ 3503' 20/10 - 2"/H20
sand, shale	2395	2868	gas chk @ 3845' 20/10 - 2"/H20
Speechly	2868	3200	
sand, shale	3200	3220	gas chk @ 4158' 24/10 - 2"/H20
Balltown	3220	3550	gas chk @ 4281' 24/10 - 2"/H20
sand, shale	3550	3584	, , , , , , , , , , , , , , , , , , , ,
Bradford	3584	3720	gas chk @ 4345' 24/10 - 2"/H20
sand, shale	3720	4116	
Riley	4116	4204	
sand, shale	4204	4297	
Benson	4297	4342	
sand, shale	4342	4470	gas chk @ TD 26/10 - 2"/H2O
•			gas chk @ COLLARS 26/10-2"/H20
		4478	Logger TD

gas chk @ cementing 42/10-2"/H20

DATE: 04/01/08 API #: 47-03304927 F

State of West Virginia Department of Environmental Protection Office of Oil and Gas

Well Operator's Report of Well Work

Farm name:Diana Goff Cather - TRST	Oper	ator Well No.:	Goff 42	:
LOCATION: Elevation:1360	Quad	Irangle:V	/olfSummit 7 1/	2
District: Coal	C	11	i	
District: Coal Latitude: 3150 Feet South of	Coul	nty	arrison	Sec.
Longitude 3550 Feet West of	_39Deg.	1/1	Min. 30 Sec.	_sec.
Longitude15501eet West OI	_ovDeg	2UNIII.	30sec.	
Company: Petroleum Development Corporation				
Company. Fett of this Development Corporation	Castan e	Used in	I to see in any li	l Commune
	Casing &		Left in well	Cement fill
Address: 120 Genesis Boulevard	Tubing	drilling	22,	up Cu. Ft.
	13-3/8"	22'		100.1
Bridgeport, WV 26330	9-5/8"	276'	276'	100 sks
Agent: Alan H. Smith	7"	1161'	1161'	176 sks
Inspector: Tim Bennett	4-1/2"	4833'	4833'	195 sks
Date Permit Issued: 09/10/07			<u> </u>	
Date Well Work Commenced: 02/27/08				
Date Well Work Completed: 02/27/08				
Verbal Plugging:				
Date Permission granted on:				
Rotary X Cable Rig				
Total Depth (feet): 5225'				
Fresh Water Depth (ft.):35, 420, 890		·		
Salt Water Depth (ft.): None Reported				ļ ————————————————————————————————————
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 480, 930			 	
Coat Deptils (11.)400, >50	1	,	1	ı
OPEN FLOW DATA				
Producing formation Benson	Pay zone	denth (ft) 46		
Gas: Initial open flow 64 MCF/d Oil:	Initial open flo	w Gopan (11)10	RPI/4	
Final open flow MCF/d F	inal open flow		161/d	
Time of ones flow between initial and f	nal tanta	11	- ·	
Time of open flow between initial and fi	nai tests	Roun	S .	4.00
Static rock Pressure630#psig (surface	pressure) and	r _/2Hou	rs	
Second producing formation_5 th Sand	Pay zone	depth (ft) 259	97-2625'	
Gas: Initial open flow_20MCF/d Oil:	Initial open flo	w E	bl/d	* * 1 1 1 2 1 1 4
Final open flow MCF/d F	inal open flow	В	bl/d	•
Time of open flow between initial and fi			s	
Static rock Pressure_55#psig (surfac			-	
NOTE: ON BACK OF THIS FORM PUT THE INTERVALS, FRACTURING OR STIMULATING LOG WHICH IS A SYSTEMATIC DETAILED INCLUDING COAL ENCOUNTERED BY THE	IG, PHYSICA GEOLOGICA	L CHANGE,	ETC. 2). THE W	ELL
Signed:				
By:Alan H. Smith				
Date: 04/01/08				

FORMATION	WELL TOP	L O G BOTTOM	REMARKS: FRESH & SALT WATER, COAL, OIL & GAS
	FEET	FEET	WATER, COAD, OID & GAS
		0	Damp @ 20'
sand, shale, RR	0	1590	1/4" H20 @ 90'
Little Lime	1590	1608	-, ·
sand, shale	1608	1624	
Big Lime	1624	1700	Gas check at 2021' - no show.
sand, shale	1700	1702	and oneon we rough a no snow.
Keener	1702	1734	
sand, shale	1734	1748	
Big Injun	1748	1790	
sand, shale	1790	1808	
Weir	1808	1870	
sand, shale	1870	2092	
Gantz	2092	2102	
sand, shale	2102	2180	
50 ft	2180	2264	
sand, shale	2264	2280	
30 ft	2280	2318	
sand, shale	2318	2361	
Gordon	2361	2404	
sand, shale	2404	2482	
4th	2482	2552	
sand, shale	2552	2601	
5th	2601	2648	
sand, shale	2648	2703	
Bayard	2703	2734	
sand, shale	2734	2755	
Elizabeth	2755	2800	
sand, shale	2800	2950	
Speechley	2950	3350	
sand, shale	3350	3402	
Balltown	3402	3706	
sand, shale	3706	3740	
Bradford	3740	3870	
sand, shale	3870	4216	
Riley	4216	4510	
sand, shale	4510	4662	
Benson	4662	4711	
sand, shale	4711	4855	Drillers TD
		4866	Logger TD

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	10/16/2012
API#:	47- 033-05009
,	22.05099

Bridgeport, WV 26330 Agent: Bob Williamson 7" 892' 892' 215 Inspector: Tim Bennett 4 1/2" 4246' 4246' 376 Date Permit Issued: 05/28/2008 Date Well Work Commenced: 09/10/2008 Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	ION: Elevation: 998' GL / 1004' KB	_ Quadrangle: _	Rosemont 7.5		
Latitude: 7,510 Feet South of 80 Deg. 17 Min. 30 Sec. Longitude 3,810 Feet West of 80 Deg. 12 Min. 30 Sec. Company: Petroleum Development Corporation Casing & Used in drilling Left in well up Cu. Ft. Bridgeport, WV 26330 13 3/8" 61' 61' Sanded Agent: Bob Williamson 7" 892' 892' 215 Inspector: Tim Bennett 4 1/2" 4246' 4246' 376 Date Permit Issued: 05/28/2008 Date Well Work Commenced: 09/10/2008 Verbal Plugging: Date Well Work Completed: Date Permission granted on: Rotary ✓ Cable Rig Rotary ✓ Cable Rig Total Vertical Depth (ft): 4298' Total Vertical Depth (ft): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	District: Simpson	County: Ha	ırrison		
Company: Petroleum Development Corporation Address: 120 Genesis Boulevard Tubing drilling Used in Tubing drilling Up Cu. Ft. Bridgeport, WV 26330 13 3/8" 61' 61' Sanded Agent: Bob Williamson 7" 892' 892' 215 Inspector: Tim Bennett 4 1/2" 4246' 4246' 376 Date Permit Issued: 05/28/2008 Date Well Work Commenced: 09/10/2008 Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary ✓ Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	Latitude: 7,510 Feet South of 39 Deg	. <u>17</u> Min			
Address: 120 Genesis Boulevard Address: 120 Genesis Boulevard Bridgeport, WV 26330 13 3/8" 61' 61' Sanded Agent: Bob Williamson 7" 892' 892' 215 Inspector: Tim Bennett 4 1/2" 4246' 4246' 376 Date Permit Issued: 05/28/2008 Date Well Work Commenced: 09/10/2008 Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	Longitude 3,610 Feet West of 80 Deg	,Min.	Sec.		
Address: 120 Genesis Boulevard Address: 120 Genesis Boulevard Bridgeport, WV 26330 Agent: Bob Williamson T'' Bridgeport, WV 26330 Agent: Bob Williamson T'' Beg2' Beg2' Beg2' Casing & Used in drilling Tubing Total Vertical Depth (ft): 4298' Fresh Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? Casing & Used in drilling Left in well Cement fil up Cu. Ft. Casing & Used in drilling Left in well Left in vell L	Petroloum Davolonment Compantion				
Address: 120 Genesis Boulevard Tubing drilling up Cu. Ft.	Company: Petroleum Development Corporation	I Casina &	I I land in	Lot in wall	Coment fill
Bridgeport, WV 26330 13 3/8" 61' 61' Sanded Agent: Bob Williamson 7" 892' 892' 215 Inspector: Tim Bennett 4 1/2" 4246' 4246' 376 Date Permit Issued: 05/28/2008 Date Well Work Commenced: 09/10/2008 Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary ✓ Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	Address: 120 Genesis Boulevard			Len in wen	up Cu. Ft.
Agent: Bob Williamson 7" 892' 892' 215 Inspector: Tim Bennett 4 1/2" 4246' 4246' 376 Date Permit Issued: 05/28/2008 Date Well Work Commenced: 09/10/2008 Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary				61'	Sanded
Inspector: Tim Bennett Date Permit Issued: 05/28/2008 Date Well Work Commenced: 09/10/2008 Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary ✓ Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	D 1 337911*	7"	892'	892'	215
Date Permit Issued: 05/28/2008 Date Well Work Commenced: 09/10/2008 Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary ✓ Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N		4 1/2"	4246'	4246'	376
Date Well Work Commenced: 09/10/2008 Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary ✓ Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N					
Date Well Work Completed: 09/24/2008 Verbal Plugging: Date Permission granted on: Rotary ✓ Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N					
Verbal Plugging: Date Permission granted on: Rotary ✓ Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	20/04/2002				
Date Permission granted on: Rotary					
Rotary Cable Rig Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N					
Total Vertical Depth (ft): 4298' Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N					
Total Measured Depth (ft): 4298' Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N					
Fresh Water Depth (ft.): 30', 150' Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N					
Salt Water Depth (ft.): None Reported Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	001 4501				
Is coal being mined in area (N/Y)? N Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N					
Coal Depths (ft.): None Reported Void(s) encountered (N/Y) Depth(s) N	- Jan Walter & Charlet				
Void(s) encountered (N/Y) Depth(s) N					
		•			
Producing formation Benson Pay zone depth (ft) 4082' Con Initial open flow 919 MCE/d Oil: Initial open flow Bbl/d	-				
Gas: Initial open flow 919 MCF/d Oil: Initial open flow Bbl/d					
Gas: Initial open flow 919 MCF/d Oil: Initial open flow Bbl/d Final open flow NT MCF/d Final open flow Bbl/d					
Gas: Initial open flow 919 MCF/d Oil: Initial open flow Bbl/d			0041		e safara
Gas: Initial open flow 919 MCF/d Oil: Initial open flowBbl/d Final open flow NT MCF/d Final open flowBbl/d Time of open flow between initial and final testsHours Static rock Pressure 1140 psig (surface pressure) after 72 Hours				•*	
Gas: Initial open flow 919 MCF/d Oil: Initial open flow Bbl/d Final open flow NT MCF/d Final open flow Bbl/d Time of open flow between initial and final tests Hours Static rock Pressure 1140 psig (surface pressure) after 72 Hours Second producing formation Balltown (commingled) Pay zone depth (ft) 2804'	Gas: Initial open flow MCF/d Oil: Initial open Final open flow MCF/d Final open flow		361/d 61/d		

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

| 10/16/2012 | Signature | Date

Were core samples taken? YesN	v _{o_XX_}	ere cuttings caught during dri	lling? YesNo_XX
Were Electrical, Mechanical or Geophysic	al logs recorded on this well	? If yes, please list Weatherfo	ord Photo Dens/Array Induc/
Comp. Neutron from 4298' - 886'. Superior Wireline GR/C	CL/CBL from 4252' - 1050'.		
NOTE: IN THE AREA BELOW PRACTURING OR STIMULATING, DETAILED GEOLOGICAL RECORCOAL ENCOUNTERED BY THE WE	PHYSICAL CHANGE, E' RD OF THE TOPS AND CLLBORE FROM SURFA	C. 2). THE WELL LOG W BOTTOMS OF ALL FO	HICH IS A SYSTEMATIC
Perforated Intervals, Fracturing, or Stimula	ating:		
09/24/2008: MIRU BJ Serv. & Superior Wireline,	ran GR/CCL/CBL from 4252' -	1050' w/cmt top @ 1246'. Perf Ber	nson w/15 holes from 4082'-4102'.
RU BJ & Gel frac formation w/ Lightning 1400 syst	em. Start 104 bbl pad, 338 bbls t	reating fluid, 40,000 lbsof 30/50 Sa	nd, 65 bbl of flush. Stage sand at
1# ppg increments from 1# - 4# ppg. N2 - 143	3,900 scf. MTP – 2900 psi, ATI	P - 2632 psi. Shut down, ISIP -	2023 psi, 5 min SIP - 1722 psi.
Perforated the BALLTOWN formation: 12 (2804-1	0). Formation broke at 2188#. Ge	frac formation. Start 106 bbl pad	, 267 bbls treating fluid, 35,000 lbs
of 30/50 Sand, 45 bbl of flush. Stage sand at	1 1# ppg increments from 1# -	4# ppg. N2 - 129,660 scf. MT	P – 2023 psi, ATP – 1936 psi.
Shut down, ISIP - 1401 psi, 5 min		SIP – 1228 psi. RDMC	D
Plug Back Details Including Plug Type an	d Depth(s): N/A		
Formations Encountered: Surface:	Top Depth		Bottom Depth
Little Lime	1051	1066	
Big Lime	1103	1160	
Keener	1160	1198	
Big Injun	1198	1256	Show Gas
Gantz	1596	1609	i
Fifty Foot	1622	1678	
Gordon Stray	1759	1788	
4th SS	1980	2058	
5th SS	2110	2159	
Speechley	2490	2839	
Balltown	2924	3370	Show Gas
Bradford	3374	3538	
Riley	3840	4000	
Benson	4080	4138	Show Gas

4298

TD

DATE:	10/16/2012
API#:	47-033-05137

LOCATION: Elevation: 1003' GL / 1011' KB	_ Quadrangle: _	Wolf Summit 7	.5	
District: Ten Mile	County: He	anison		
Latitude: 14,600 Feet South of 39 Deg.		. ³⁰ Se	c.	
Longitude 8,100 Feet West of 80 Deg				
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	13 3/8"	39	39	Sanded In
Agent: Bob Williamson	9 5/8***	254	254	100
Inspector: Tim Bennett	7°	1440	1440	292
Date Permit Issued: 8/27/2008	4 1/2"	4913'	4913'	444
Date Well Work Commenced: 10/18/2008				
Date Well Work Completed: 11/05/2008				
Verbal Plugging:			+	
			-	
Date Permission granted on: Rotary Cable Rig				
Total Vertical Depth (ft): 5101'				
Total Measured Depth (ft): 5101'	<u> </u>	 		
Fresh Water Depth (ft.): 45'				
Salt Water Depth (ft.): 1375'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): None Reported				
Void(s) encountered (N/Y) Depth(s) N				
OPEN FLOW DATA (If more than two producing formation Producing formation Pay Gas: Initial open flow 839 MCF/d Oil: Initial open Final open flow 66 MCF/d Final open flow Time of open flow between initial and final tests Static rock Pressure 335 psig (surface pressure) a	zone depth (ft)_ flowB wBb Hours	4844 bl/d bl/d	lata on separate s	heet)
Second producing formation 5th, 4th, Gordon Pay 20	one depth (ft) 2523	1, 2492, 2410		41 1 11 1
Gas: Initial open flow MCF/d Oil: Initial open	flowB	bl/d	• •	
Final open flow MCF/d Final open flo	wBb	ol/d		
Time of open flow between initial and final tests Static rock Pressure psig (surface pressure) a				
certify under penalty of law that I have personally examined all the attachments and that, based on my inquiry of those ind that the information is true, accurate, and complete	and am familia	with the infor	mation submitted le for obtaining t	d on this docume the information I
DT 1000		10/	16/2012	
Signature			Date	

Were core samples taken? Yes	No_XX Were	cuttings caught during d	rilling? YesNo_XX
Were Electrical, Mechanical or Geophy: Array Induction from 5101-1420. Superior GR/CL/CBL	sical logs recorded on this well? I from 4886 - 1430.	If yes, please list Weather	ford Photo Density/Comp Neutron/
NOTE: IN THE AREA BELOW FRACTURING OR STIMULATING DETAILED GEOLOGICAL RECO COAL ENCOUNTERED BY THE V	G, PHYSICAL CHANGE, ETC. DRD OF THE TOPS AND B VELLBORE FROM SURFACE	2). THE WELL LOG OTTOMS OF ALL F	WHICH IS A SYSTEMATIC
Perforated Intervals, Fracturing, or Stim	ulating;		
11-5-2008: MIRU BJ Services and Superior:F	Ran Bond/CCL log found TD @ 4886'.	CT @ 1572'.Perforated the	BENSON formation:12 (4844-50).
Formation broke at 4200#.Gel frac formation. Start 71 bbl pad, 225	biblis treating fluid, 30,000 lbs of 30/50 Sand, 97 bbl of	flush. Stage sand at 1# ppg increments	from 1# - 4# ppg. MTP - 4200 psi, ATP - 2389 psi.
Shut down, ISIP - 2147 psi, 5 min SIP - 2022 psi.Pe	rforated the formation: 8 (2657-61), 4 (2643	3-45), 4(2624-26). Formation bro	oke at 2737#. Pumped 5 bbl of Acid awa
Perforaled the formation: 12 (2600-06). Formation bro	oke at 2673#. Pumped remaining 7 bbls of a	cid away into formation. Perforat	led the 5TH SAND formation: 8 (2523-27)
Gel frac termations. Start 91 bbl pad, 277 bbls treating fluid, 60,000 lbs of 30/60	Sand. Stage sand at 1# ppg increments from 1# - 4# ppg. Spot ac	dd and batlour formation. Start 58 bbl pad, 148 b	bin treating field, 15,000 the of 20.50 Sand. 44 bid of inital flux
Stage sand at 1# ppg increments from 1# - 4# p			
Plug Back Details Including Plug Type-	and Depth(s): Perforated the 4TH/GOF	RDON formations: 4 (2492-94),	12 (2410-16). Formation broke at 3650#
Gel free formation. Start 83 bbl pad, 398 bbls treating fluid, 50,000 lbs of 30	NSO Sand, 39 bbls of Rush. Stage sand at 0.54 ppg increment	s from 1# - 4# ppg. MTP - 3650 psi, ATP - 2	833 ps/. Shut down, ISIP - 2499 ps/. 5 min SIP - 2196 ps
Formations Encountered:	Top Depth	/	Bottom Depth
Formations Encountered: Surface:	Top Depth		Bottom Depth
Surface:	Top Depth		Bottom Depth
Surface:	Top Depth 1796	1851	Bottom Depth
Surface: Big Lime		/ 1851 1952	Bottom Depth
Surface: Big Lime Big Injun	1796		Bottom Depth
Surface: Big Lime Big Injun Gantz	1796 1851	1952	Bottom Depth
Surface: Big Lime Big Injun Gantz Fifty Foot	1796 1851 2284	1952 2320	Bottom Depth
Surface: Big Lime Big Injun Gantz Fifty Foot Gordon	1796 1851 2284 2394	1952 2320 2442	Bottom Depth
Surface: Big Lime Big Injun Gantz Fifty Foot Gordon	1796 1851 2284 2394 2488	1952 2320 2442 2527	Bottom Depth
Surface: Big Lime Big Injun Gantz Fifty Foot Gordon 4th SS 5th SS	1796 1851 2284 2394 2488 2560	1952 2320 2442 2527 2614	Bottom Depth
Surface: Big Lime Big Injun Gantz Fifty Foot Gordon 4th SS 5th SS Speechley	1796 1851 2284 2394 2488 2560 2620	1952 2320 2442 2527 2614 2661	Bottom Depth
Surface: Big Lime Big Injun Gantz Fifty Foot Gordon 4th SS 5th SS Speechley	1796 1851 2284 2394 2488 2560 2620 2900	1952 2320 2442 2527 2614 2661 3160	Bottom Depth
Surface: Big Lime Big Injun Gantz Fifty Foot Gordon 4th SS 5th SS Speechley Balltown Bradford	1796 1851 2284 2394 2488 2560 2620 2900 3186	1952 2320 2442 2527 2614 2661 3160 3490	Bottom Depth
Surface: Big Lime Big Injun Gantz Fifty Foot Gordon 4th SS 5th SS Speechley Balltown	1796 1851 2284 2394 2488 2560 2620 2900 3186 3500	1952 2320 2442 2527 2614 2661 3160 3490 3620	Bottom Depth

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	10/16/2012	
API#:	47-033-05138	

ATION: Elevation: 1324 GL /	Quadrangle:	Wolf Summit 7	7.5	
District: Tenmile		rrison	`	
		. 30 Se	·r	
		Se		
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	13 3/8"	19'	19'	Sanded Ir
Agent: Bob Williamson	9 5/8"	253'	253'	102
Inspector: Tim Bennett	7"	1741'	1741'	354
Date Permit Issued: 08/27/2008	4 1/2"	5340'	5340'	481
Date Well Work Commenced: 10/24/2008				
Date Well Work Completed: 11/17/2008				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig				
Total Vertical Depth (ft): 5485'				
Total Measured Depth (ft): 5485'				
Fresh Water Depth (ft.): 45', 115'			 	
Salt Water Depth (ft.): 1650'			 	
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 395'				
Void(s) encountered (N/Y) Depth(s) N				
		<u> </u>		<u> </u>
PEN FLOW DATA (If more than two producing formation Benson Pa	ations please includ	de additional d	ata on separate sl	heet)
Gas: Initial open flow NT MCF/d Oil: Initial open	y zone depth (ft)_	161		
	lowBb	1/d 1/d		
	Hours			
Static rock Pressure 990 psig (surface pressure)		'S		and the second
Second producing formation	11 (0)			
Second producing formation Pay Gas: Initial open flow MCF/d Oil: Initial open	zone depth (II)	1/4		
Final open flowMCF/d Final open fl	UM DEI	7/4 1/4		
Time of open flow between initial and final tests	UwBDI	/u		
Static rock Pressurepsig (surface pressure)	-C - II			

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Signature

10/16/2012 Date

were core samples taken? Yes	No Were	cuttings caught during	drilling? Yes	_{No_} XX
Were Electrical, Mechanical or Geophyst Array Induction from 5482-1720. Superior GR/CL/CBL	sical logs recorded on this well? from 5330 - 1430.	If yes, please list Weathe	erford Photo Density	/Comp Neutron/
NOTE: IN THE AREA BELOW FRACTURING OR STIMULATING DETAILED GEOLOGICAL RECO COAL ENCOUNTERED BY THE W	ORD OF THE TOPS AND R	2). THE WELL LOG	WHICH IS A S	TORDER
Perforated Intervals, Fracturing, or Stim	ulating:			
11/12/2008:MIRU BJ Serv. & Superior Wireline,	ran GR/CCL/CBL from 5330'. Perf Bens	on w/12 hales from 5233'-52	242'.RU BJ Services.	test lines. & num
an N2 assist Lightning 1400 gel system. Forma	tion broke at 2240#.Start 65 bbl pad, 2	257 bbls treating fluid, 35,00	00 lbs of 30/50 Sand.	87 bbl of flush
Stage sand at 1# ppg increments from 1# - 4#	ppg. MTP - 2932 psi, ATP - 2586 psi	. Shut down, ISIP - 2405	psi. 5 min SIP - 202	7 nsi 2nd etane
Perforated the 5th Sand formation: 12 (3040-46).	Was going in for second run on the form	ation and lost gun in hole. Co	ould not go back in wi	th live oun in hole
RDMO. 11/13/2008: MIRU Arvilla R# 13	99, RU 3 3/8" bit & drill baffle at 2	2854 & baffle at 3150' 8	clean out sand &	gun to 5260!
11/17/2008: Swab & clean hole &	take final OF = 888MCF	SI & TII. on 12/30/2	OUS	guii to 5260
Plug Back Details Including Plug Type a	and Depth(s): N/A	JI G 112 011 12/00/2	.000	
Formations Encountered: Surface:	Top Depth		Bottom I	<u>Depth</u>
Little Lime	2166	2182		
Big Lime	2202	2256		
Keener	2256	2300		
Big Injun	2305	2352		
Gantz	2688	2727		
Fifty Foot	2782	2840	Show (200
Gordon Stray	2917	2928	SHOW	
4th SS	2952	3004		
5th SS	3018	3061		
Speechley	3528	3950		
Balltown	3996	4244		
Bradford	4327	4473	· · · · · · · · · · · · · · · · · · ·	
Riley	4768	5130		
Benson	5230	5273	Show Ca	
TD .	5485	<u> </u>	Show Ga	15
				. *

that the information is true, accurate, and complete

DATE:	
API #:	039-06282

Farm name: BROWN - PERDUE	Operator Wel	1 No :		
LOCATION: Elevation:	Oundronals:	Blue	CREE	
District: Big Sandy		1.00	Il a	
Latitude: 38.489026 Feet South of Deg.	County: /			
Longitude-8/.383592 Feet West of Deg				
Company: Paven Ridge Energy				
3230 Pennsylvania Hve	Casing &	Used in	Left in well	Cement fill
Address: Charleston WV 25.302	Tubing	drilling		up Cu. Ft.
		<u> </u>		
Agent: Kym Cunningham				
Inspector: TERRY LABOR				
Date Permit Issued: 4/Le/2011		93/8	395	C75
Date Well Work Commenced: 5/3///		70	1461	C75
Date Well Work Completed: 6/5/11		4/12	1950	1205ks
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig				
Total Vertical Depth (ft): 2202				
Total Measured Depth (ft): 2/68				
Fresh Water Depth (ft.):				
Salt Water Depth (ft.):				
Is coal being mined in area (N)Y)?				
Coal Depths (ft.):				
Void(s) encountered (N/Y) Depth(s)				
OPEN FLOW DATA (If more than two producing formation Producing formation Pay	one place inclu	مار امساناناله مار	41	
Producing formation WEIR Pay	zone denth (ft)	de additional da 1905	ua on separate sr	icet)
Gas: Initial open flow 100 MCF/d Oil: Initial open f	flow <i>O</i> BI	bl/d	क हा है। जीवित	er Self Sweet (* 1855 e.C.) Om gjif filigi ga dispeye
Final open flow 180 MCF/d Final open flow				•
Time of open flow between initial and final tests	Hours 4			N
Static rock Pressurepsig (surface pressure) at	fter 70 Hour	rs	\ \$\!	
Second producing formation By ZalmaPay zo	ne depth (ft) 🖊	583		
Gas: Initial open flow SO MCF/d Oil: Initial open f		bl/d		aadati Pota ka
Final open flow 250 MCF/d Final open flow				
Time of open flow between initial and final tests				
psig (surface pressure) at	iter 70 Hour	rs		
I certify under penalty of law that I have personally examined all the attachments and that, based on my inquiry of those indi	and am familiar viduals immedia	with the informately responsible	nation submitted e for obtaining th	on this document and ne information I believe

Were core samples taken? YesNo Were cuttings caught during drilling? YesNo
Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Gamma Ray / Weishes DENSITY / INCLUSION / FEM PENTURE BURGOT
NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulating:
WEIR 1705 - 1834 (20 Holes) 500 BB/ FORM
TREDIMENT 75% Quarty w 500 gal HC1 1590 Acio
: 25000 165 20/40 SAND
Span w Big INSUN 1583-1558 (20 Holes) 500 B31
75% Quality Fram Then ment W 500 gal 15% HCL
Plug Back Details Including Plug Type and Depth(s):
2
Formations Encountered: Top Depth / Bottom Depth
Surface:
SAND : SHALE 0-275 WEIR 1705-1835
SAND 275- 390 SHALE 1835- 2009
SAND : SHALE 390-560 COFFE SHALE 2009-2019
SAND 560 - 746 SHALE 2019 - 2202
SAND: SHALE 740-815
Salt SANDS 815-1232
SHA1E 1232-1292
MAX for 1292-1330
SHAIE 1330-1448
Little hime 1448-1458
PENCII CAVE 1458-1468 Little Lime 1468-1496
Big TN/in 1496 - 1576 SQUAN 1576 - 1630
SOYAW 1576- 1630 SHALE 1630- 1705

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:		
API #:	039-06283	2

Farm name: Blown - Parous	Operator Wel	1 No.:	·	
LOCATION: Elevation: 877	Quadrangle: _	Blue	- CREE	
District:	County:	KANDUS	ha	
Company: Paven Ridge Energy				,
Address: Charleston WV 25302	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Agent: Rusa Cudwingham				
Inspector: TELLY GRAAI		95/8	410°	075
Date Permit Issued: 04/06/201		700	1652	CTS
Date Well Work Commenced: 5/7///		4/2	2088	120 sts.
Date Well Work Completed: 5/1/11				
Verbal Plugging:			<u> </u>	
Date Permission granted on:				
Rotary Cable Rig			MEGI	
Total Vertical Depth (ft):			Unice of	Dil & Gas
Total Measured Depth (ft): 2688			MAY 1	g 2012
Fresh Water Depth (ft.): NUNE				0 2012
Salt Water Depth (ft.):			WV Depa	troont of
Is coal being mined in area (NY)?		Caran Fred	vironment	al Protection
Coal Depths (ft.):				
Void(s) encountered (N/Y) Depth(s)				
OPEN FLOW DATA (If more than two producing formation WE'R Pay	ons please incluzone depth (ft)	ide additional da	ita on separate sl	neet)
Gas: Initial open flow MCF/d Oil: Initial open f				
Final open flow <u>/</u> SO MCF/d Final open flow Time of open flow between initial and final tests				
Static rock Pressure 280 psig (surface pressure) a				
Second producing formationPay zo	one depth (ft)			
Gas: Initial open flowMCF/d Oil: Initial open for Final open flowMCF/d Final open flowMCF/d		bl/d bl/d		
Time of open flow between initial and final tests				
Static rock Pressurepsig (surface pressure) a				

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Signature

5/14/12 Date

Were core samples taken? Y	es_ <u>//</u> No	Were cuttings caught of	during drilling? Yes <u>&</u>	No
Were Electrical, Mechanical o NEUFRON / I	r Geophysical logs recorded on th Jola Chival Timp	is well? If yes, please list	Cama Ro	oy I
NOTE: IN THE AREA FRACTURING OR STIMU DETAILED GEOLOGICA	BELOW PUT THE FOLLO JLATING, PHYSICAL CHANG AL RECORD OF THE TOPS Y THE WELLBORE FROM SI	WING: 1). DETAILS GE, ETC. 2). THE WELI AND BOTTOMS OF	OF PERFORATED L LOG WHICH IS A ALL FORMATIONS	INTERVALS, SYSTEMATIC
Perforated Intervals, Fracturin	g, or Stimulating:			
PERF 1690-	1728 (18 Holis)	1920-200	3 (26 Hole	·s)
7570 FUAN	1 Stage FRA	e with joe	10 90/ 15	<i>7</i> 0
HyDOCHloric P	i I Stage Franc Nei 35000	16s 20/40	SAND	
Plug Back Details Including F	Plug Type and Depth(s):			
Formations Encountered: Surface:	Top De	epth /	Botton	n Depth
SAND: SHA	lE 0-250	SgA	W 1740 - 416 1780-	1780
SHNO	250-350	SH	916 1780-	1865
SAND & SHALL	= 350 - 510	WE	ik 1865	- 2005
SAND	510-640	Cof	LEE SHALE E	
SHALE	640-680	SA	16 2192	- 2698_
SAND ? SHA.	1= 680-850			
SAND	850-890 \$ 890-1080			
SAND & SHAP	k 890-1080			
	1080 - 141	0	×	
SHA1E	1410-146	5		
MAK TON	1465 - 161			
Little Lime	= 1610 - 16	26		
PENCIL CAUE	: 1626- 16 1630- 1	630		
Big Lime	1630 - 1	1660		
Bia Talinal				

•

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:			
API #:	039-	06294	

TION: Elevation: 868	_ Operator Wel	1 NO.:	Pa.	W 07 200
TION: Elevation: 068	Quadrangle: _	10/48	(Register	K 1.5
District: Latitude 3/398742 Feet South of Deg Longitude 8/.468705 Feet West of Deg	County:	KANDO	NhH	
Latitude 38.398742 Feet South of Deg	gMin	Sec	•	
Longitude <u>81.468705</u> Feet West ofDe	gMin	ıSec	•	
Para Pilat				
Company: RAVEN Lidge Energy 3230 Perhosy Ivanta Ave	Casing &	Used in	Left in well	Cement fill
Address: Charleston WV 25302		drilling		up Cu. Ft.
_				
Agent: Ryan Curkinghum				
Inspector: TERRY GRBAN		95/8"	3900	C75
Date Permit Issued: 06/03/2011		July 18	1530'	CT5
Date Well Work Commenced: 6 /24/1/		4/12	2050	1205Ks
Date Well Work Completed: 6/29/11	/			
Verbal Plugging:				
Date Permission granted on:				
Rotary K Cable Rig				
Total Vertical Depth (ft): 2243°				
Total Measured Depth (ft): 2243				
Fresh Water Depth (ft.):				
Salt Water Depth (ft.):				
Is coal being mined in area (NY)?				
Coal Depths (ft.):				
Void(s) encountered (N/Y) Depth(s)				<u> </u>
EN FLOW DATA (If more than two producing forms			DEC	
Producing formation UEIR Pa	ations please incl by zone depth (ft)	ude additional d	ata on separates	of Oll & Gas
Gas: Initial open flow 50 MCF/d Oil: Initial open				
Final open flow 210 MCF/d Final open f			M.S	A SENT
Time of open flow between initial and final tests_			1 4 54 6 57	
Static rock Pressure <u>/BO</u> psig (surface pressure)) after <u>36</u> Ho	urs	A. A. S. 177.	Toponia
Second producing formation Pay	zono donth (ft)		Environi	ierts! Prok
Second producing formation Pay Gas: Initial open flow MCF/d Oil: Initial open	/	Bbl/d		
Final open flowMCF/d Final open f		Bbl/d		
spen	··			

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Signature

112/12

Were core samples taken? YesNo Were co	uttings caught during drilling? YesNo
Were Electrical, Mechanical or Geophysical logs recorded on this well? If DENSITY TROUGES: ON - TEM	yes, please list <u>Camma Ray Méutle</u> s. Decale de
NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1) FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2 DETAILED GEOLOGICAL RECORD OF THE TOPS AND BO'COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE T). The well log which is a systematic troms of all formations. Incliding
Perforated Intervals, Fracturing, or Stimulating:	
PERF: 1970-1815 (37 Holes) Quulity FUAM FRAC WITH AND 35,000 & \$ 20/40 SA	750 B3t 75%
VAUNTY POUN FRAC WITH	500 GA/ HEL 1570
4ND 33,000 BBS 20140 SA	BND
Plug Back Details Including Plug Type and Depth(s):	
NIA	
	·
Formations Encountered: Top Depth Surface:	/ Bottom Depth
<u>surface.</u>	
SAND & SHALE 0-365	WEIR 1810 - 1985
SHALE 365-405	SHALE 1985-2135
SOND & SHALE 405-615	Coffee SHALE 2135-214
SUND 615-670	BEREA 2144-2147
SAND! SHALE 670-830	5HALF 2147-2243
SulT SUND 830- 1350	
SAND ! SHALE 1350-1460	
MAX TON 1460 - 1500	
SHALE 1500 - 1575	
Little Lime 1575- 1602	70a
SHALE 1602 - 1612	
Big LiniE 1612 - 1638	O Section 1
Big IN/6N 1638 - 1715	1.545 N. 5. 1 (
Squaw 1715 - 1741	
SHA1E 1941- 1310	

On.

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	3.00	<i>f</i>
API #: 47-0	39-06	295

n name: CAUENISER	_ Operator We	ll No.:	1 A	· · · · · · · · · · · · · · · · · · ·
CATION: Elevation: 749°	_ Quadrangle:	BI	1 A Let CREA	= 15
District:	County:	Kannu	tha	
Latitude:Feet South ofDeg.	Miı	nS	ec.	
		1S	ec.	
Company: University				
Address: 3230 Pennsylvania Au	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Agent: Charleston WV 25302				
Inspector: TERRY GREAN				
Date Permit Issued:				
Date Well Work Commenced: 8/22/1/				
Date Well Work Completed: 8/28/1/	95/8		432	C75
Verbal Plugging:	701		1540	C75
Date Permission granted on:	4/1/2		2048	950'
Rotary Cable Rig				
Total Vertical Depth (ft): 2070				
Total Measured Depth (ft): 2 U 2/				
Fresh Water Depth (ft.):				
Salt Water Depth (ft.):				
Is coal being mined in area (NY)?				
Coal Depths (ft.):				
Void(s) encountered (N/Y) Depth(s)				
PEN FLOW DATA (If more than two producing formation Producing formation Pay Gas: Initial open flow MCF/d Oil: Initial open flow MCF/d Final open flow Time of open flow between initial and final tests	zone depth (ft) flowB wBb 2Bt	<i>l 790 → /</i> bl/d bl/d	data on separate sh	eet)
Static rock Pressure 280 psig (surface pressure) as		rs		
Second producing formation Pay zo Gas: Initial open flow MCF/d Oil: Initial open f		bl/d		to to
Final open flow MCF/d Final open flow	w Bh		4 - *	
Time of open flow between initial and final tests	Hours	 	· · · · .	Free game for
Static rock Pressurepsig (surface pressure) at	fterHou			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Signature

Date Date

were core samples taken: 1 es_	140 <u>-7t</u>	were cuttings caught of	luring drilling? YesNo
Were Electrical, Mechanical or G	eophysical logs recorded on the	nis well? If yes, please list_	Gamma Ray -
	- ROSING	GETTOR) - TETRIC	ik wreak 5
FRACTURING OR STIMULA	ATING, PHYSICAL CHAN RECORD OF THE TOPS	GE, ETC. 2). THE WELL AND BOTTOMS OF A	OF PERFORATED INTERVALS, LOG WHICH IS A SYSTEMATIC ALL FORMATIONS, INCLUDING PTH.
Perforated Intervals, Fracturing, o	or Stimulating:		
PERF FROM	n 1733 -	1875 40	Holes ToTal
FRAC WITH	BAKER Hug	hes Doden	x 500 331
75 Quailty Fo	am Tréstmest	us:wa 350	00 165 20/20
FRAC WITH 75 Quailty Fo SAND AND 5	100 gal 150	TO HYDOCHIS	ric Acio
Plug Back Details Including Plug	Type and Depth(s):		
Formations Encountered: Surface:	Top D	epth /	Bottom Depth
Salt San.) /2.	50	1280
MAXON	130	0	1340
Little Lib	ne 138	20	1119
	ne /30	· · · · · · · · · · · · · · · · · · ·	1430
Big Limb	= 15	30	1570
Sgaw	16,	10	1660
			, , ,
WEIR	17	90	1900
		· · · · · · · · · · · · · · · · · · ·	The state of
			007.03.20%

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	
API #:	039-66304

ION: Elevation: 802	Quadrangle: _	CLio	7.5	
District Bill Sadous	County:	CLIO Kanau	BA	
Latitude: 37.504464 Feet South of Deg.	Min		,	
District: Sig Sally Section Deg. Latitude: 38.504464 Feet South of Deg. Longitude 1559815 Feet West of Deg.	Min	Sec		
Company: RAVON Lidge-Energy				
3230 Pennsylvania the	Casing &	Used in	Left in well	Cement fill
Address: Charleston WV 25302	Tubing	drilling		up Cu. Ft.
Agent: Rupal Charristan us)				
Inspector: TERRY GRBAN				
Date Permit Issued: 08/110/2011		95/8	375	CTS
Date Well Work Commenced: 12/3/11		290	1571	675
Date Well Work Completed: 12/8/11		2/1/2	2086	1505
Verbal Plugging:				
Date Permission granted on:		gang, Kana	A Em Ki / Em Fr	
Rotary & Cable Rig			CEIVED	<u> </u>
Total Vertical Depth (ft):		Office	foil & Ga	ACT
Total Measured Depth (ft): 2160		MAY	1 8 2012	
Fresh Water Depth (ft.):		IVIA	1 0 2012	
Salt Water Depth (ft.):		VAR / STA	pariment	dif .
Is coal being mined in area (NY)?		WW LA	ental Prote	ction
Coal Depths (ft.):		LIVIOIIII		
Void(s) encountered (N/Y) Depth(s)	1		<u> </u>	<u> </u>
EN FLOW DATA (If more than two producing formation	ons please inclu	ıde additional d	ata on separate s	heet)
Producing formation Squaw Pay :	zone depth (ft)	1710		
Gas: Initial open flow 250 MCF/d Oil: Initial open f	low <i>O</i> E			
Final open flow 2 75 MCF/d Final open flow	и <u>О</u> В	bl/d		
Time of open flow between initial and final testsstatic rock Pressure 50 psig (surface pressure) at	Hour	S		
Static rock Pressurepsig (surface pressure) at	ner <u>Po</u> not	ırs		
Second producing formation Pay zo	ne depth (ft)			
Gas: Initial open flowMCF/d Oil: Initial open f				
Final open flowMCF/d Final open flow				
Time of open flow between initial and final tests				
Static rock Pressurepsig (surface pressure) at	tterHo	ars		

that the information is true, accurate, and complete.

• •	Were cuttings caught during drilling? YesNo
Were Electrical, Mechanical or Geophysical logs recorded on	this well? If yes, please list Gamma Ray MEU LEVA
FRACTURING OR STIMULATING, PHYSICAL CHAP	Owing: 1). Details of Perforated Intervals, NGE, etc. 2). The well log which is a systematic s and bottoms of all formations, including surface to total depth.
Perforated Intervals, Fracturing, or Stimulating:	
PERT 1710-1750 (40 HO	165) 75% Quality FORM
FRAC WIFH 500 gal He	L 15% ; 35000 /65
20/40 DAND /10/A	750 BBI FORM
Memontal	
Plug Back Details Including Plug Type and Depth(s):	
Formations Encountered: Top I Surface:	Depth / Bottom Depth
	Depth / Bottom Depth
Surface:	Big Lime 1580 - 1612 Big INIUN 1612 - 1703
Surface: SAND: SUNE 0-210	Big Lime 1580 - 1612 Big INJUN 1612 - 1703
Surface: SAND: SHALE 0-210 SAND 210-325	Big Lime 1580 - 1612 Big INJUN 1612 - 1703
Surface: SAND: SHDE 0-210 SAND: 210-325 SAND: SHALE 325-525	Big Lime 1580 - 1612 Big INJUN 1612 - 1703
Surface: SAND: SHALE 0-210 SAND 210-325 SAND: SHALE 325-525 SAND 525-608 SHALE 609-655 SAND 655-682	Big Lime 1580 - 1612 Big INJUN 1612 - 1703 Squar 1703 - 1755 SHALE 1755 - 1940 WEIR 1940 - 2028
Surface: SAND: SHALE 0-210 SAND 210-325 SAND: SHALE 325-525 SAND 525-608 SHALE 609-655 SAND 655-682 SAND: SHALE 682-820	Big Lime 1580 - 1612 Big INJUN 1612 - 1703 SHALE 1755 - 1940
Surface: SAND: SHALE 0-210 SAND: SHALE 325-525 SAND: SHALE 325-525 SAND: 525-608 SHALE 603-655 SAND: 655-682 SAND: SHALE 682-820 SAND: 820-875	Big Lime 1580 - 1612 Big Injun 1612 - 1703 Squan 1703 - 1755 SHALE 1755 - 1940 WEIR 1940 - 2088 SHALE 2088 - 2160
Surface: SAND: SHALE 0-210 SAND: SHALE 325-525 SAND: SHALE 325-525 SAND: 525-608 SHALE 608-655 SAND: 655-682 SAND: SHALE 682-820 SAND: SHALE 682-820 SAND: SHALE 875-956	Big Lime 1580 - 1612 Big Injud 1612 - 1703 Squan 1703 - 1755 SHALE 1755 - 1940 WEIR 1940 - 2088 SHALE 2088 - 2160
Surface: SAND: SHALE 0-210 SAND: SHALE 325-525 SAND: SHALE 325-525 SAND: SZ5-608 SHALE 608-655 SAND: STALE 682-820 SAND: SHALE 682-820 SAND: SHALE 875-956 SAND: SAND: SAND: 956-13;	Big Lime 1580 - 1612 Big Injud 1612 - 1703 Squan 1703 - 1755 SHALE 1755 - 1940 WEIR 1940 - 2088 SHALE 2088 - 2160
Surface: SAND: SHALE 0-210 SAND: SHALE 325-525 SAND: SHALE 325-525 SAND: 525-608 SHALE 608-655 SAND: 655-682 SAND: SHALE 682-820 SAND: SHALE 682-820 SAND: SHALE 875-956	Big Lime 1580 - 1612 Big Injud 1612 - 1703 Squan 1703 - 1755 SHALE 1755 - 1940 WEIR 1940 - 2088 SHALE 2088 - 2160
Surface: SAND: SHALE 0-210 SAND: SHALE 325-525 SAND: SHALE 325-525 SAND: SES-608 SHALE 603-655 SAND: SHALE 682-820 SAND: SHALE 682-820 SAND: SHALE 875-956 SAND: SHALE 875-956 SAND: SHALE 875-956 SHALE 1370-1412 PIAXLON 1412-1534	Big Lime 1580-1612 Big INJUN 1612-1703 Squan 1703-1755 SHALE 1755-1940 WEIR 1940-2028 SHALE 2088-2160
Surface: SAND: SHALE 0-210 SAND: SHALE 325-525 SAND: SHALE 325-525 SAND: SZ5-608 SHALE 608-655 SAND: SHALE 682-820 SAND: SHALE 682-820 SAND: SHALE 875-950 SAND: SAND: SHALE 875-950 SAND: SAND 956-13: SHALE 1370-1412	Big Lime 1580 - 1612 Big Injus 1612 - 1703 Squar 1703 - 1755 SHALE 1755 - 1940 WEIR 1940 - 2088 SHALE 2088 - 2160
Surface: SAND: SHALE 0-210 SAND: SHALE 325-525 SAND: SHALE 325-525 SAND: SES-608 SHALE 603-655 SAND: SHALE 682-820 SAND: SHALE 682-820 SAND: SHALE 875-956 SAND: SAND 956-13; SHALE 1370-1412 PIRKLON 1412-1534	BIG Lime 1580 - 1612 BIG INJUN 1612 - 1703 SQUAN 1703 - 1755 SHALE 1755 - 1940 LUEIR 1940 - 2088 SHALE 2088 - 2160

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:		
API#:	039-1	06321

Farm name: Biko Dodd	Operator Well	No.:	<i>A</i>		1
LOCATION: Elevation:	Quadrangle: _	Ci10	7.5		ı
District: 38.501795 Feet South of Deg. Longitude-81.370043 Feet West of Deg.	Min				
Company: Raven Didge Energy 3230 Dennsylvania Ave Address: Charuston WV 25302	Casing & Tubing	Used in drilling	Left in well	Cement fil up Cu. Ft.	.1
Agent: RYAN CUNWIGHAM					
Date Permit Issued: 10/28/2011		95/8	395	CTS	
Date Well Work Commenced: 12/17/1/	,	ZN	1834	CTS	5
Date Well Work Completed: 12/22/11		41/2	2349	150	SKS
Verbal Plugging:					
Date Permission granted on: Rotary Cable Rig Total Vertical Depth (ft): 2368°					
Total Measured Depth (ft): 2368			RECEIVE)	
Fresh Water Depth (ft.):		Offi	ce of Oil &		
Salt Water Depth (ft.): Is coal being mined in area (NY)?			MAY 1 8 2017		
Coal Depths (ft.):		VVV.	Departme	nt of	
Void(s) encountered (N/Y) Depth(s)	<u> </u>	L Enviroi	imental Pr	btection	لــــــا
OPEN FLOW DATA (If more than two producing formatic Producing formation Pay Gas: Initial open flow MCF/d Oil: Initial open flow MCF/d Final open flow Time of open flow between initial and final tests Static rock Pressure Popsig (surface pressure) at Second producing formation Pay zo Gas: Initial open flow MCF/d Oil: Initial open flow MCF/d Final open flow MCF/d Final open flow Time of open flow between initial and final tests	zone depth (ft) flow	2220 bbl/d bbl/d s ars 20/2 bbl/d bbl/d	ata on separate sh	neet)	
Static rock Pressure / 40 psig (surface pressure) at					

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

nature

5/15/12

Were core samples taken? YesNo Were of	cuttings caught during drilling? Yes	sNo
Were Electrical, Mechanical or Geophysical logs recorded on this well? If	yes, please list <u>Camma</u> EmDeknJude	Ray/NEUMON
	- 00 (p) College Williams	
NOTE: IN THE AREA BELOW PUT THE FOLLOWING: I FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.: DETAILED GEOLOGICAL RECORD OF THE TOPS AND BO COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE	2). THE WELL LOG WHICH IS PTTOMS OF ALL FORMATIO	SASVSTEMATIC
Perforated Intervals, Fracturing, or Stimulating:		
WEIR 7500 QUAITY FORM FRI 4,000 165 20/40 SAND PERF	ac 1000 Gal 1.	5% HEL
SQUAR 75 De Quality FORM A	FRAC 500 GAI	15 70 HCL
25000 165 20/40 SAND PE	RF 2080 - 201	2 (35HUES)
To Tal 750 BB/ F	TOAM TREAT	
Plug Back Details Including Plug Type and Depth(s):	OHM THEAF	
	14	
Formations Encountered: Top Depth	/ Bot	tom Depth
Surface:		
SAND: SHALE 0-315	MAXTON 1688.	- 1796
SAND 315 - 340	SHALE 1796	- 1838
SUND : SHOLE 340 - 4/30	Little Line 18	938 - 1846
Spals 430-460	SHA1E 1846	
SAND & SHALE 460- 502	Big Lime 18	
SANU 502- 625	Big IN jun 18	986-1975
SAND ! SHALE 625 - 806	Sauge 1975	- 2025
SUND 806 - 832	SquaW 1975 SHPIE 2025	- 2/92
SHAIE 882 - 920	WEIR 2192	- 2233
SANO 920 - 955	SHALE 22	
SMALE 955 - 1000	SHAFE EE	52 2360
SAND 1000 - 1028		
SAND : SHAF 1028-1296		
SALY SAND 1296 - 1637		
SHALE 1637 - 1688		
311012 1000		

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	1-27-2012
API#:	47-049-02108

	operator wen	No.: 10H (83216		
TION: Elevation: 1469'	Quadrangle: _	Sladesville		
District: Winfield	County: Marion	n		
Latitude: 10334' Feet South of 39 Deg.	30 Min.	Sec.		
Longitude 3400' Feet West of 80 Deg.	57 Min.	30 Sec.		
Company: Chesapeake Appalachia, L.L.C.				
Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fi up Cu. Ft.
Oklahoma City, OK 73154-0496	20"	100'	100'	Drive
Agent: Eric Gillespie	13 3/8"	483'	483'	476 c
Inspector: Tristan Jenkins	9 5/8"	2924'	2924'	1279
Date Permit Issued: 7/20/2010	5 1/2"	13717'	13717'	2664
Date Well Work Commenced: 10/16/2011				
Date Well Work Completed: 12/28/2011				
Verbal Plugging:				
Date Permission granted on:			and (1) Francisco	
Rotary Cable Rig			Oil & Gas	
Total Vertical Depth (ft): 7,270'(cement plug @ 13,601')				
Total Measured Depth (ft): 13,728'		MAY 2	1 2012	
Fresh Water Depth (ft.): 350'				
Salt Water Depth (ft.): None			artment of	
Is coal being mined in area (N/Y)? N	Land Y	vironmen	tal Protect	ion
Coal Depths (ft.): 100'				
Void(s) encountered (N/Y) Depth(s) N				
Totale) encountered (17/1) Depute)	1	1		L

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Marlens Olliams

Static rock Pressure ______psig (surface pressure) after ____

Were core samples taken? YesNo_N	Were cuttings caught during drilling? Yes Y NoNo
	logs recorded on this well? If yes, please list
FRACTURING OR STIMULATING, PH DETAILED GEOLOGICAL RECORD	T THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, IYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING LBORE FROM SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulatin	ng:
(See Attached)	
Plug Back Details Including Plug Type and D	Depth(s): PBTD cement @ 13,601
Formations Encountered: Surface:	Top Depth / Bottom Depth
(See Attached)	

Formation/Lithology	Top Depth (ft)	Bottom Depth (ft)
SS/SHALE	0	100
SS/COAL	100	150
SS/SHALE	150	640
SS	640	740
LS	740	899
Big Lime	899	995
Big Injun	995	1050
SHALE/SS	1050	1193
Berea	1193	1222
SHALE	1222	1440
SHALE/SS	1440	1640
SS	1640	1660
SHALE	1660	1920
SS	1920	2040
SHALE/SILT	2040	7050
Geneseo	7050	7090
Tully	7090	7170
Hamilton	7170	7460
Marcellus	7460	13728

DATE:	1-27-2012	
API #:	47-049-02119	

Farm na	me: Edwin Bunner	Operator Wel	ll No.: 6H (83221	2)		به میراند. این میراند
LOCAT	ION: Elevation: 1469'	Quadrangle: _	Gladesville			
	District: Winfield	County: Mario	on		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
	Latitude: 10360' Feet South of 39 Deg.	30 Mir	n. 00 Sec			1
	Longitude 4860' Feet West of 79 Deg.	57 Mir	1. 30 Sec			
	Company: Chesapeake Appalachia, L.L.C.			i i		
	Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Pt.	
	Oklahoma City, OK 73154-0496	20"	100'	100'	Driven	
	Agent: Eric Gillespie	13 3/8"	483'	483'	480 cf	
	Inspector: Tristan Jenkins	9 5/8"	2868'	2868'	1215 cf	
	Date Permit Issued: 9/1/2010	5 1/2"	12919'	12919'	2749 cf	
. [Date Well Work Commenced: 9/11/2011	,	.			
	Date Well Work Completed: 1/12/2012					7
	Verbal Plugging:					7
	Date Permission granted on:					7
	Rotary Cable Rig				1	
	Total Vertical Depth (ft): 7,286'(cement plug @ 12,806')					
	Total Measured Depth (ft): 12,919'					
	Fresh Water Depth (ft.): 350'					
	Salt Water Depth (ft.): None					
	Is coal being mined in area (N/Y)? N					\neg
	Coal Depths (ft.): 420'					
	Void(s) encountered (N/Y) Depth(s) N					
OPE	N FLOW DATA (If more than two producing formation	ons please inclu	ide additional da	ta on senarate s	heet)	
		zone depth (ft)		on separate s	11001)	
G	as: Initial open flow 3,323 MCF/d Oil: Initial open fl	lowB	bl/d			
	Final open flowMCF/d Final open flow	vBt	ol/d			
_	Time of open flow between initial and final tests	Hours				
S	tatic rock Pressure 4,736 psig (surface pressure) af	terHou	irs			
	econd producing formationPay zon					
G	as: Initial open flowMCF/d Oil: Initial open fl		bl/d			
	Final open flow MCF/d Final open flow		ol/d			
	Time of open flow between initial and final tests					
5	tatic rock Pressurepsig (surface pressure) af	terHou	irs			
all the a	under penalty of law that I have personally examined attachments and that, based on my inquiry of those indivinformation is true, accurate, and complete.					
	Marline Will Signature	0010-0	5	19-1212		
	Signature	MUM'S		<u>U //UI</u> O Date		

Were core samples tak	en? Yes	No_N	Were	e cuttings caught during	drilling? Yes_	No
Were Electrical, Mech		hysical logs reco	orded on this well?	If yes, please list		
FRACTURING OR DETAILED GEOL	STIMULATI OGICAL RE	NG, PHYSICA CORD OF TH	L CHANGE, ETC IE TOPS AND B	1). DETAILS OF P . 2). THE WELL LOG OTTOMS OF ALL I E TO TOTAL DEPTH.	WHICH IS A SY	STEMATIC
Perforated Intervals, F	racturing, or S	timulating:				
(See Attached)			· · · · · · · · · · · · · · · · · · ·			
					· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Plug Back Details Incl	uding Plug Ty	pe and Depth(s):	PBTD cement	t @ 12,806'	1 - 1.	
Formations Encounter Surface:	red:		Top Depth	/	Bottom D	Depth .
(See Attached)						
						
			was and the	·	· · · · · · · · · · · · · · · · · · ·	
					 	

Formation/Lithology	Top Depth (ft)	Bottom Depth (ft)
SS/SHALE	0	420
SHALE/COAL	420	440
SHALE	440	640
SS.	640	740
LS	740	899
Big Lime	899	995
Big Injun	995	1050
SHALE/SS	1050	1193
Berea	1193	1222
SHALE	1222	1440
SHALE/SS	1440	1640
SS	1640	1660
SHALE	1660	1920
SS	1920	2040
SHALE/SILT	2040	7160
Geneseo	7160	7184
Tully	7184	7240
Hamilton	7240	7586
Marcellus	7586	12919

DATE:	1-27-2012
API#:	47-049-02141

Farm name: Edwin Bunner	•	1 No.: 3H (83301	(8)	
LOCATION: Elevation: 1469'	Quadrangle:			
District: Winfield	County: Mario	on		
Latitude: 10338' Feet South of 39 Deg.	30 Min	. 00 Sec	3. V ₂ V ₂	
Longitude 8434' Feet West of 80 Deg.	00 Min	. <u>00</u> Sec	ા જેવું ત્	
Company: Chesapeake Appalachia, L.L.C.	I			
Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Oklahoma City, OK 73154-0496	13 3/8"	447'	447'	610 cf
Agent: Eric Gillespie	9 5/8"	2911'	2911'	1215 cf
Inspector: Tristan Jenkins	5 1/2"	13543'	13543'	2670 cf
Date Permit Issued: 2/10/2011		 		
Date Well Work Commenced: 8/13/2011				
Date Well Work Completed: 12/16/2011				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig				
Total Vertical Depth (ft): 7,244'(cement plug @13,428')				
Total Measured Depth (ft): 13,543'				
Fresh Water Depth (ft.): 350'				
Salt Water Depth (ft.): None				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 60'				
Void(s) encountered (N/Y) Depth(s) N				
OPEN FLOW DATA (If more than two producing formation Producing formation Marcellus Pay z Gas: Initial open flow 3,553 MCF/d Oil: Initial open flow Final open flow MCF/d Final open flow Time of open flow between initial and final tests Static rock Pressure 4,709 psig (surface pressure) after the producing formation of the producing formation p	zone depth (ft) 7 ow - Bl / Bb / Hours ter Hour	7.600-13,399' bl/d bl/d rs	ata on separate s	heet)
Second producing formation Pay zon				
Gas: Initial open flowMCF/d Oil: Initial open flowMCF/d Final open flowMCF/d Final open flow	owBเ ๋ ผก	bi/d J/d		
Time of open flow between initial and final tests	Hours	n/u		
Static rock Pressurepsig (surface pressure) aft				
I certify under penalty of law that I have personally examined a all the attachments and that, based on my inquiry of those indiv that the information is true, accurate, and complete.	riduals immedia	ately responsibl	nation submitted le for obtaining t	on this document and he information I belie
Marley (Velle Signature	amo	<u> </u>	18-20 12 Date	

Were core samples taken? YesNo_N	Were cuttings caught during drilling? Yes Y NoNo
Were Electrical, Mechanical or Geophysical logs re LWD GR from 6665-13492' MD.	ecorded on this well? If yes, please list
FRACTURING OR STIMULATING, PHYSIC	HE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, CAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING BE FROM SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulating:	
(See Attached)	
Plug Back Details Including Plug Type and Depth((s): PBTD cement @ 13,428'
Formations Encountered: Surface:	Top Depth / Bottom Depth
(See Attached)	
	·

Formation/Lithology	Top Depth (ft)	Bottom Depth (ft)
SS/SHALE	0	60
COAL/SILT	60	80
SS/SHALE	80	450
SHALE	450	640
SS	640	740
LS	740	899
Big Lime	899	995
Big Injun	995	1050
SHALE/SS	1050	1193
Berea	1193	1222
SHALE	1222	1440
SHALE/SS	1440	1640
SS	1640	1660
SHALE	1660	1920
SS	1920	2040
SHALE/SILT	2040	6950
Geneseo	6950	6981
Tully	6981	7040
Hamilton	7040	7436
Marcellus	7436	13543

DATE:	2-1-2012	
API#:	47-049-02143	

Farm name: Bryan Neel	Operator Well No.: 5H (833070)				
LOCATION: Elevation: 1692'	Quadrangle:	Fairmont East			
District: Winfield Latitude: 1481' Feet South of 39 Deg. 1 Longitude 1433' Feet West of 80 Deg.		ı. <u>30</u> Se			
Company: Chesapeake Appalachia, L.L.C.					
Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.	
Oklahoma City, OK 73154-0496	20"	100'	100'	Driven	_r w1
Agent: Eric Gillespie	13 3/8"	455'	455'	510 cf	
Inspector: Sam Ward	9 5/8"	3112'	3112'	1365 cf	
Date Permit Issued: 4/8/2011	5 1/2"	15611'	15611'	3788 cf	
Date Well Work Commenced: 6/8/2011					
Date Well Work Completed: 12/14/2011					
Verbal Plugging:					
Date Permission granted on:					
Rotary Cable Rig					
Total Vertical Depth (ft): 7,483'(cement plug @15,517')					
Total Measured Depth (ft): 15,622'					
Fresh Water Depth (ft.): 350'					
Salt Water Depth (ft.): None					
Is coal being mined in area (N/Y)? N					
Coal Depths (ft.): none					
Void(s) encountered (N/Y) Depth(s) N					
OPEN FLOW DATA (If more than two producing formation Producing formation Marcellus Pay z Gas: Initial open flow 3,352 MCF/d Oil: Initial open flow MCF/d Final open flow Time of open flow between initial and final tests Static rock Pressure 4,864 psig (surface pressure) after the producing formation open flow and producing formation producing fo	cone depth (ft) owB Bullet Hours	7,779-15,422' Bbl/d bl/d	lata on separate s	heet)	
Second producing formation Pay zor					
Gas: Initial open flow MCF/d Oil: Initial open flow MCF/d Final open flow					
Time of open flow between initial and final tests					
Static rock Pressurepsig (surface pressure) aft					٠
I certify under penalty of law that I have personally examined all the attachments and that, based on my inquiry of those individual that the information is true, accurate, and complete.					

Were core samples taken? Yes	No_X	Were cu	ttings caught during dril	ling? Yes_XNo
Were Electrical, Mechanical or Geo	physical logs record	ed on this well? If y	es, please list_no	
NOTE: IN THE AREA BELO FRACTURING OR STIMULAT DETAILED GEOLOGICAL RE COAL ENCOUNTERED BY TH	ING, PHYSICAL (ECORD OF THE	CHANGE, ETC. 2) TOPS AND BOT	. THE WELL LOG W TOMS OF ALL FOI	HICH IS A SYSTEMATIC
Perforated Intervals, Fracturing, or S	Stimulating:			
(See Attached)				
		·		
<u> </u>		· · · · · · · · · · · · · · · · · · ·		
Plug Back Details Including Plug Ty	pe and Depth(s): C	ement @ 15,5	17'	
Formations Encountered: Surface:		Top Depth	I	Bottom Depth
(See attached)				
		×		
		×		

FORMATION/LITHOLOGY	TOP DEPTH (ft)	BOTTOM DEPTH (ft)
Shale	0	860
Shale and LS	860	890
Shale	890	950
Shale and Sltst	950	1010
LS and Shale	1010	1190
LS and SS	1190	1310
Shale and minor SS	1310	1700
Big Injun	1700	2020
Shale and minor SS	2020	2590
Shale and Sltst	2590	2750
Balltown	2750	2998
Shale and minor Sltst	2998	6990
Shale and LS	6990	7040
Shale	7040	7124
Geneseo	7124	7165
Tully	7165	7234
Hamilton	7234	7470
Marcellus	7470	15562

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State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	2-1-2012
API #:	47-049-02144

arm name: Bryan Neel	Operator We	ll No.: 6H (83304	0)		
OCATION: Elevation: 1692'	Quadrangle: Fairmont East				
District: Winfield	County: Mari	on			
Latitude: 1496' Feet South of 39 Deg.		1. ³⁰ Sec			
		n. 30 Sec			
Company: Chesapeake Appalachia, L.L.C.					
Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.	
Oklahoma City, OK 73154-0496	20"	100'	100'	Driven	
Agent: Eric Gillespie	13 3/8"	475'	475'	518 cf	
Inspector: Sam Ward	9 5/8"	3107'	3107'	1366 cf	
Date Permit Issued: 3/10/2011	5 1/2"	13918'	13918'	3291 cf	
Date Well Work Commenced: 7/10/2011					
Date Well Work Completed: 12/14/2011					
Verbal Plugging:					
Date Permission granted on:			and the Velace four		
Rotary Cable Rig			CENTED OF OHR (tae	
Total Vertical Depth (ft): 7,489'(cement plug @13,826')		Office) ()î () ii () 	AFAG	
Total Measured Depth (ft): 13,920'		l M	AY 2 1 2012		
Fresh Water Depth (ft.): 350'					
Salt Water Depth (ft.): None		W	Jepartmer	nt of	
Is coal being mined in area (N/Y)? N		Environ	nental Pri	dection-	
Coal Depths (ft.): None		1			
Void(s) encountered (N/Y) Depth(s) N					
OPEN FLOW DATA (If more than two producing formation Producing formation Marcellus Pay z Gas: Initial open flow 1,318 MCF/d Oil: Initial open flow Time of open flow between initial and final tests Static rock Pressure 4,868 psig (surface pressure) aft Second producing formation Pay zor Gas: Initial open flow MCF/d Oil: Initial open flow Gas: Initial open flow MCF/d Oil: Initial open flow	cone depth (ft) ow B v Bt Hours ter Hou ne depth (ft)	8,124'-13,731' bl/d ol/d irs	ata on separate sh	neet)	
Final open flow MCF/d Final open flow					
Time of open flow between initial and final tests					
Static rock Pressurepsig (surface pressure) aft					

all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Malch Williams
Signature

5-18-2012

Were core samples taken? YesNo_X	Were cuttings caught during drilling? Yes X No
Were Electrical, Mechanical or Geophysical logs records	ed on this well? If yes, please list No
FRACTURING OR STIMULATING, PHYSICAL (OLLOWING: 1). DETAILS OF PERFORATED INTERVALS, CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING OM SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulating:	
(See Attached)	
Plug Back Details Including Plug Type and Depth(s): Co	ement @ 13,826'
Formations Encountered: Surface:	Top Depth / Bottom Depth
Shale 0 940	
Shale and LS 940 1030	
Shale 1030 1120	
LS 1120 1270	
Shale and minor SS/Sltst 1270 1990	
LS and SS 1990 2710	
Balltown 2710 3004	
Shale 3004 3350	
Shale and minor Sltst 3350 5900	
Shale 5900 7367	
Geneseo 7367 7400	
Tully 7400 7487	
Tully 1400 1401	
Hamilton 7487 7817	

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	2-24-2012	
API#:	47-051-01291	

ATION: Elevation: 1355'	Ouadran	gle: Glen I	Easton 7 1/2'		
District: Liberty Latitude: 1947' Feet South of 39 I	County:	Marshall Min. 30			
	Deg. <u>47</u> Deg. 37	Min. 30	Sec Sec		
			566		
Company: Chesapeake Appalachia, L.L.C.		·			-
Address: P.O. Box 18496	Casing a Tubing		ed in Iling	Left in well	Cement fil up Cu. Ft.
Oklahoma City, OK 73154-0496	20"		100'	100'	Driven
Agent: Eric Gillespie	13 3/	3"	1210'	1210'	1256 ct
Inspector: Bill Hendershot	9 5/8	"	2623'	2623'	1130 ct
Date Permit Issued: 8/3/2009	5 1/2	11	13260'	13260'	3237 ct
Date Well Work Commenced: 8/9/2011					
Date Well Work Completed: 1/22/2012					
Verbal Plugging:			DE	CEN/ER	
Date Permission granted on:			13 12 14 24	of Oil & G	
Rotary Cable Rig			×	// \(\) \(415
Total Vertical Depth (ft): 7115'(cement plug 13,	186')		MAY	0 9 2012	
Total Measured Depth (ft): 13260'					
Fresh Water Depth (ft.): 104'		Reads.	WV De	partment	of
Salt Water Depth (ft.): 1653'		Hilly	ironme	intal Prote	ction
Is coal being mined in area (N/Y)? N					
Coal Depths (ft.): 910-1000', 1082'-1092', 1663-10	673'				
Void(s) encountered (N/Y) Depth(s) N					
	 				<u> </u>
PEN FLOW DATA (If more than two producing form	-			ta on separate sl	heet)
	Pay zone depth				
Gas: Initial open flow 5,990 MCF/d Oil: Initial op Final open flow MCF/d Final open		Bbl/d Bbl/d			
Time of open flow between initial and final tests		Boi/u lours			
Static rock Pressure 4,625 psig (surface pressure		Hours			
Second producing formation Page Gas: Initial open flow MCF/d Oil: Initial open	y zone depth (t) Bbl/d	_		
•	flow	Bbl/d			4

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Makline Libliams
Signature

5/7/2012 Date

Were core samples taken? YesNo_N	Were cuttings caught during drilling? Yes Y NoNo
Were Electrical, Mechanical or Geophysical logs recorded open hole logs run from 0-2635' MD; LWD GR from 6330-13211' MD.	on this well? If yes, please list GR, neutron, density, and resistivity
FRACTURING OR STIMULATING, PHYSICAL CH	LLOWING: 1). DETAILS OF PERFORATED INTERVALS, ANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING M SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulating:	
(See Attached)	
Plug Back Details Including Plug Type and Depth(s): Cen	nent @ 13,186'
	•
Formations Encountered: To Surface:	p Depth / Bottom Depth RECEIVED Office of Oil & Gas
(See Attached)	MAY 0 9 2012
	WV Department of
	Environmental Protection
	· · · · · · · · · · · · · · · · · · ·

Formation/Lithology	Top Depth (ft)	Bottom Depth (ft)
SHALE/LS	0	210
LS	210	350
LS/SHALE/SS	350	700
SHALE/SS/LS	700	820
SS	820	910
COAL	910	1000
LS/SHALE	1000	1082
Pittsburg Coal	1082	1092
LS/SHALE	1092	1210
LS	1210	1300
SHALE/LS	1300	1663
Freeport Coal	1663	1673
SHALE	1673	1850
COAL	1850	1870
SHALE/SS	1870	2000
LS	2000	2050
SHALE/LS	2050	2193
Big Lime	2193	2236
Big Injun	2236	2470
SHALE	2470	6989
Geneseo	6989	7009
Tully	7009	7052
Hamilton	7052	7280
Marcellus	7280	13211

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WV Department of Environmental Protection

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	3-6-2012	
API #:	47-051-01315	

	······································	o report or v	von work			
Farm n	ame: O E Burge	Operator Wel	II No.: 6H (62738	31)		
LOCA	ΓΙΟΝ: Elevation: 1355'	Quadrangle:	Glen Easton 7 1/2	?', Littleton 7 1/2'		
	District: Liberty	County: Mars	hall			
	Latitude: 1960' Feet South of 39 Deg.	47 Min	ı ³⁰ Sec			
	Longitude 14.856' Feet West of 80 Deg.	35 Min	. <u>00</u> Sec	: .		
	Company: Chesapeake Appalachia, L.L.C.					
	Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.	
	Oklahoma City, OK 73154-0496	20"	100'	100'	Driven	
	Agent: Eric Gillespie	13 3/8"	1227'	1227'	1218 cf	
	Inspector: Bill Hendershot	9 5/8"	2625'	2625'	1125 cf	
	Date Permit Issued: 10/20/2009	5 1/2"	13123'	13123'	3474 cf	
	Date Well Work Commenced: 9/12/2011					
	Date Well Work Completed: 1/30/2012					
	Verbal Plugging:					
	Date Permission granted on:					
	Rotary Cable Rig					
	Total Vertical Depth (ft): 7,117'(cement plug 13,049')					
	Total Measured Depth (ft): 13,136'					
	Fresh Water Depth (ft.): 104'					
	Salt Water Depth (ft.): 1653'					
	Is coal being mined in area (N/Y)? N					
	Coal Depths (ft.): 1085'					
	Void(s) encountered (N/Y) Depth(s) N			DEP.		
OPF	N FLOW DATA (If more than two producing formation	na nlaga inglu	طم مططئنا مسما عام		# #TAIL NO. 3 TO 1709	
F	N FLOW DATA (If more than two producing formation roducing formation Marcellus Pay z	one depth (ft) 7	16 augilional de ,400'-13,030'	na on sephinate su	Perit O	
	as: Initial open flow 4,665 MCF/d Oil: Initial open flo	ow <u>22</u> Bt	ol/d	'AM	19 5015	
	Final open flow MCF/d Final open flow	Bb	I/d	antDo	10 Inemirent	
S	Time of open flow between initial and final teststatic rock Pressure 4.626psig (surface pressure) aft		re.	MADE	antal Profecti	ion
			3	Environn	partment of lental Protection	
	econd producing formation Pay zon				•	
U	as: Initial open flowMCF/d Oil: Initial open flow Final open flowMCF/d Final open flow			•		
	Time of open flow between initial and final tests	Hours				
S	tatic rock Pressurepsig (surface pressure) after		S			
I certify	under penalty of law that I have personally examined a	nd am familiar	with the inform	nation submitted	on this document and	d
all the a	ttachments and that, based on my inquiry of those indivi-	iduals immedia	tely responsible	for obtaining th	e information I belie	eve
that the	information is true, accurate, and complete.					

Were core samples taken?	YesNo_X	_ Were cı	attings caught during drilli	ng? Yes X No
Were Electrical, Mechanical	or Geophysical logs r	ecorded on this well? If y	es, please list No	
NOTE: IN THE AREA FRACTURING OR STIM DETAILED GEOLOGIC COAL ENCOUNTERED I	AL RECORD OF	THE TOPS AND POT	THE WELL LOG WH	
erforated Intervals, Fracturing	ng, or Stimulating:			
See Attached)				
Ding Book Details Institution	N . T			
Plug Back Details Including F	lug Type and Depth(s	^{3):} Cement @ 13,04	19'	
Formations Encountered: Surface:		Top Depth		Bottom Depth
See Attached)				
oco / maoriou)				
				· · · · · · · · · · · · · · · · · · ·
			•	

FORMATION/LITHOLOGY	TOP DEPTH (ft)	BOTTOM DEPTH (ft)
Shale w/ minor LS	0	210
LS w/ minor Shale	210	350
Shale, LS, and SS	350	800
SS	800	1000
Shale, LS, and minor SS	1000	1085
Pittsburgh Coal	1085	1095
Shale and LS	1095	1530
Shale	1530	1700
SS and Shale	1700	2000
LS and SS	2000	2218
Big Injun	2218	2473
Shale	2473	5130
Shale w/ minor LS and SS	5130	5160
Shale w/ minor LS	5160	5750
Shale	5750	6550
Shale w/ minor LS	6550	7017
Geneseo	7017	7044
Tully	7044	7079
Hamilton	7079	7235
Marcellus	7235	7257
Shale	7257	13136

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	2-24-2012
API#:	47-051-01323

arm name: O E Burge MSH	Operator W	ell No.: 10H (6273	382)	
OCATION: Elevation: 1355'	Quadrangle:	Glen Easton 7 1/2	2! 	
District: Liberty	County: Mar	shall		
T '4 1 440001 -	g. <u>47</u> Mi	n. 30 Sec).	 _
Longitude 14868' Feet West of 80 De	eg. <u>37</u> Mi	n. 30 Sec	.	
Company: Chesapeake Appalachia, L.L.C.				
Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Oklahoma City, OK 73154-0496	20"	100'	100'	Driven
Agent: Eric Gillespie	13 3/8"	1224'	1224'	1310 cf
Inspector: Bill Hendershot	9 5/8"	2620'	2620'	1133 cf
Date Permit Issued: 10/30/2009	5 1/2"	13999'	13999'	3748 cf
Date Well Work Commenced: 10/11/2011				
Date Well Work Completed: 2/8/2012				
Verbal Plugging:				
Date Permission granted on:			RECEIVE	ID .
Rotary Cable Rig V		01	ice of Oil	& Gas
Total Vertical Depth (ft): 7,123'(cement plug 13,880)')		MAY 0.9 2	112
Total Measured Depth (ft): 14,000'			WAY 89 G	1,5
Fresh Water Depth (ft.): 104'		INT	/ Departm	ont of
Salt Water Depth (ft.): 1653'		Enviro	nmental i	rotection
Is coal being mined in area (N/Y)? N		5 N M W 5 P Vs	30 11 1 2 C-51 2 E-6-40 C	
Coal Depths (ft.): 1080'				
Void(s) encountered (N/Y) Depth(s) N				
OPEN FLOW DATA (If more than two producing format Producing formation Marcellus Pay Gas: Initial open flow 6,985 MCF/d Oil: Initial open Final open flow MCF/d Final open flow Time of open flow between initial and final tests Static rock Pressure 4,630 psig (surface pressure) a	zone depth (ft) flow 29 B	7.400'-13,861' bl/d bl/d	ta on separate sh	neet)
Second producing formationPay z	one depth (ft)			
Gas: Initial open flowMCF/d Oil: Initial open	flowB	bl/d		
Final open flow MCF/d Final open flow		ol/d		
Time of open flow between initial and final tests				

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Mallal Williamz
Signature

57/2012 Date

Were core samples taken? Ye	esNo_X	Were cuttir	ngs caught during drilling? Yes X	No
Vere Electrical, Mechanical or	Geophysical logs record	ded on this well? If yes,	please list none	
FRACTURING OR STIMU	LATING, PHYSICAL L RECORD OF THE	CHANGE, ETC. 2). T TOPS AND BOTTO	DETAILS OF PERFORATED DETAILS OF PERFORATED DETAILS OF ALL FORMATIONS, TOTAL DEPTH.	YSTEMATIC
erforated Intervals, Fracturing	, or Stimulating:	·		
See Attached)				

		-		
lug Back Details Including Pl	ug Type and Depth(s):	Cement @ 13.880	1	
		Dement @ 10,000		
Formations Encountered: urface:		Top Depth	/ Bottom I RECE Office of (
see Attached)			MAY 0 9	
			WV Dapart Environmental	
				>
			······································	
		O		

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FORMATION/LITHOLOGY	TOP DEPTH (ft)	BOTTOM DEPTH (ft)
Shale and LS	0	340
LS, Shale, and SS	340	820
SS	820	1000
LS and Shale	1000	1079
Pittsburgh Coal	1079	1088
LS and Shale	1088	1530
Shale and LS	1530	1700
Shale and SS w/ minor LS	1700	2220
Big Injun	2220	2484
Shale	2484	4450
Shale w/ minor LS	4450	4530
Shale	4530	7020
LS and Shale	7020	7089
Geneseo	7089	7117
Tully	7117	7157
Hamilton	7157	7367
Marcellus	7367	7456
Shale w/ minor LS	7456	13866

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MAY 0 9 2012

WV Department of Environmental Protection

DATE: 5/9/12

API#: 47-087-04700

State of West Virginia Department of Environmental Protection Office of Oil and Gas

Well Operator's Report of Well Work

Farm name:	Max Fl	esher	Ope	erator Well No.	.:HR 443_	
LOCATION:	Elevation: _	675'	Qua	drangle:	Reedy WV 7	.5'
Dis	trict:	Reedv	County	Ros	ine	
Lat	itude: 10775	_Reedy _Feet South of _38	Deg. 55 N	Vin. 00 S	ec.	
Lor	gitude 2983'	Feet West of81_	Deg. 25 Mi	in. 00 Se	ec.	
Company:	Hard Rock E	exploration				
		-	Casing & Tubing	Used in drilling	Left in well	Cement fill
Address: 124	4 Martins Br	anch Road	1 ubing	unning		up Cu. Ft.
	rleston WV, 2		20"	19	19	NA
Agent: Marc			13 3/8"	84	84	70 ft3 CTS
Inspector: Ed			9 5/8"	633	633	306 ft3 CTS
Date Permit I		1	7"	2323	2323	537ft3 CTS
Date Well We			4.5"	7538	7538	130 ft3
Date Well We				1330	7556	13010
Verbal Plugg		Q. D. X. 12	Ran Gamma	Log from KOI	P(3545' – 4164'T	VD)
Date Permissi		n•		om 3500' to su		▼ D)
Rotary x		Rig		MOSOU WAL		
		TMD, 4164'TVD				
	Depth (ft.):		- Unice	of CHA (Cas	
PICSH WATER	Depui (11.).	73,230				
Salt Water I	Depth (ft.): 15	(97) 1971)	MA	1 2 1 2012		ļ
Sait Water I	<i>у</i> ерия (11. <i>)</i> . 13	007,1071				-
Is coal being	mined in eres	(N/V)? N	WYD	per same per professiones per ser	A of	
		N/A				
Coar Depuis	.11.)		Environm	e ntal Fro	dection	j
OPEN FLO	OW DATA					
Produc	ing formatio	nLower Huron_	ShalePay zone		288'MD- 7630 ⁻ 4117'TVD – 41	
Gas: Tr	sitial open fl	ow_200MCF/d C	hil: Initial open f			104 1 410
Cas. II	nuar open m	1500WCF/G	I Final open i	low	_DUI/G	
riii Ti	ar open now	1500+MCF/c	ı rınaı open ı		DUI/U	
		ow between initial ar				
Static	rock Pressure	epsig (su	riace pressure) a	nerHo	urs	
Second	d producing t	formation	Pay 70	ne depth (ft)		
	nitial open flo		Dil: Initial open f		Bbl/d	
	al open flow		Final open flow		_Bbl/d	
		ow between initial a	nd final tests	Ψ ₀		
Static	rock Pressure	epsig (su	face pressure) as	fterH	ours	
NOTE: ON	ים <i>ארצי</i> רבי	THIS FORM PUT TH	E FOLLOWING	1) DETAIL	C OE BEDEOD AT	תשי
		RING OR STIMULA				
LOG WHI	CH IS A SV	STEMATIC DETAIL	ED GEOLOGICA	L RECORD (DE ALL FORMA	LIONS.
INCLUDIN	NG COAL EN	COUNTERED BY/TH	HE WELLBORD		or remaind commercial	
	gned:	The state of the s				
D.,		resident				
		5/21/2012				

Formation:	Top:	Bottom:
Soil, Sand, Shale	0	1494
Salt Sand	1494	1754
Lime	1754	1794
Injun	1794	1814
Shale	1814	2199
Coffee Shale	2249	2264
Devonian Shale	2264	4164
Lower Huron Section	4080	4164

All depths shown As TVD

02/15/12 Run 175 jts of R-3 4.5" 11.6ppg N-80 casing with 15 stg to depth of 7538' set at 7546' KB.
02/16/12 RU 10k valve and DSA. Drop 2 1.25" balls and seat with N2 at 3500 scf/min. Pressure up to 2500psi and wait 20 min (11:30am). Continue to pressure up to open pump out shoe. RD N2 equipment and RU to 4.5"X7" annulus. Dump squeeze with 100sx cmt mixed at 15ppg

	Sleeve	Sleeve Size	Packers	
Stage 1	P/O Shoe	N/A	7408	
Stage 2	7274	1.250	7185	
Stage 3	7051	1.500	6962	
Stage 4	6828	1.750	6739	
Stage 5	6605	1.875	6516	
Stage 6	6382	2.000	6293	
Stage 7	6159	2.125	6070	Office of Classics
Stage 8	5936	2.250	5848	
Stage 9	5713	2.375	5625	REAN GO STORY
Stage 10	5491	2.500	5402	MAY 2 1 COY
Stage 11	5268	2.750	5179	
Stage 12	5045	2.875	4956	WW Department
Stage 13	4822	3.125	4733	Environments: Prossuce
Stage 14	4599	3.250	4510	books and the New that a first section of the control of the contr
Stage 15	4376	3.500	4288	
Anchor			2647	

03/01/12 MIRU Baker Services. Start pumping N2 on Stg 1 at 40k scf/min and work rate up according to pressure. Pump total of 1MMscf N2. Drop ball for Stg 2. Wait for ball to drop. Start pumping at 16k scf/min and land ball. Open sleeve at 4611psi. Up rate and pump total of 1MMscf N2. Drop ball for Stg 3. Wait for ball. Pump ball down at 18k scf/min and land ball. Open sleeve at 4736psi. Up rate and pump total of 1MMscf N2. Drop ball for Stg 4. Repeat for stgs 4-15.

	Stg 1	Stg 2	Stg 3	Stg 4	Stg 5	Stg 6	Stg 7	Stg 8
Max P	5987	6148	5996	5986	5986	5878	5876	5718
Avg P	4490	5879	5790	5834	5809	5610	5835	5529
Max R	90.8	73.3	84.0	68.2	858.9	80.1	85.5	103.0
Avg R	67.7	52.5	76.9	56.0	83.2	74.8	79.0	96.6
5 min	2253	2780	2480	2910	2527	2472	2764	2675
	Stg 9	Stg 10	Stg 11	Stg 12	Stg 13	Stg 14	Stg 15	
Max P	5459	5713	5095	5253	5467	5301	5235	
Avg P	5331	5567	5007	5151	5379	5212	5206	
Max R	105.0	111.0	107.6	109.0	106.6	108.5	110.0	
Avg R	103.0	110.0	107	108.0	105.3	107.0	109.0	
5 min	2274	2399	2266	2310	2366	2226	2288	

DATE: 6/1/12

API#: 47-087-04709

State of West Virginia Department of Environmental Protection Office of Oil and Gas

Well Operator's Report of Well Work

Farm name:	Clair and C	Charlotte Allen	Oper	ator Well No.:_	HR 413	
LOCATION: E	Elevation:	713'	Quad	lrangle:	_Reedy WV 7.5	5'
Distri	et R	eedy	County	Roans		
Latitu	de: 4728' Fe	et South of 38De	g. 55 M	in. 00 Sec.		
		eet West of 81				
Company:H	ard Rock Expl	oration				
			Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 1244 l			ļ	101	101	374
	eston WV, 253	12	20"	19'	19'	NA CTG
Agent: Marc S			13 3/8"	84	84	51ft3 CTS
Inspector: Ed C			9 5/8"	674	674	318 ft3 CTS
Date Permit Iss			7"	2366	2366	603 ft3 CTS
Date Well Wor			4.5"	7823	7823	130 ft3
Date Well Wor		3/13/12	 _ _	1	25601 47201177	<u> </u>
Verbal Pluggin					3560' – 4730''T	VD)
Date Permission			Ran Gyro Lo	g from (3500' -	Surface)	1773 S S S S S S S S S S S S S S S S S S
	Cable		Ran Open ho	le Log from (24	08' – Streface)	La di Calaba
		ID, 4196'TVD			Office of	Did Gas
Fresh Water I	Depth (ft.): 55-	60'				
				<u> </u>	JUN 0	6 2002
Salt Water De	epth (ft.): 1240	', 1900'				
				<u> </u>	WELL TO STORE S	
Is coal being m	ined in area (N	I/Y)? N				
Coal Depths (ft	t.):	N/A	1	21.0	h vironmen	1 . 41. L
OPEN FLOV	W DATA					
Produci	ng formation	Lower Huron_Sl	nalePay zone	e depth (ft) 42	87'MD- 7933 '	MD
	-			4:	130'TVD - 41	96' TVD
Gas: Ini	tial open flow	_oder MCF/d Oil: I	initial open flo	wBb	1/ d	
Final	open flow	2000+MCF/d	Final open f	low	Bbl/d	
Time	of open flow	between initial and	l final tests	72 H	ours	
Static ro	ock Pressure	psig (surfa	ace pressure) a	fter Hou		
Station	JOK 1 1000 01 0	F8 (F ,			
Second	producing for	mation	Pay zo	ne depth (ft)_		
	tial open flow	MCE/d Oi	1: Initial open i		Bbl/d	
		MCF/d			Bbl/d	
Time.	of open flow	between initial and	I final tests			
L HHIC Statio w	e or open now	psig (surf	ace pressure) a		ours	
Static ro	JOK LICSSUIC_	hark (amr	acc prossure) a		, m. U	
NOTE: ON	BACK OF TH	IS FORM PUT THE	FOLLOWING	: 1). DETAILS	OF PERFORAT	ED
INTERVAL	S. FRACTURI	NG OR STIMULAT	ING, PHYSICA	AL CHANGE,	ETC. 2). THE W	ELL
LOG WHIC	H IS A SYST	EMATIC DETAILEI	O GEOLOGICA	L RECORD O	F ALL FORMA	TIONS,
INCLUDIN	G COAL ENC	UNITERED BY THE	WELLBORE.	\bigcap		
	ned:	Ames Tot	yk !	/		
2.5	Ву: 🔑	estident				
	Date:	6/6/12	\mathcal{O}			

Top:	Bottom:
0	1668
1668	1963
1963	2295
2295	2307
2307	2309
2309	4196
4140	4196
	0 1668 1963 2295 2307 2309

All depths shown As TVD

02/26/12 Run total of 181 jts of 4.5" 11.6ppf R-3 casing to depth of 7823'. Run 17 stg Packers Plus mechanical packer system. Finish running casing at 8:00pm. Land hanger in wellhead and ND BOP. RU DSA and 10k frac valve at 10:15pm. MIRU Baker cmt crew. Drop ball for P/O shoe, and start pumping N2 to land balls. Pressure up on casing to set packers and open shoe at 3763psi. SWI. RD N2 equipment. RU to perform annular squeeze. Dump with 100sx type 1 3% CaCl. SWI.

	Sleeve	Sleeve Size	Packers	
Stage 1	7821	Pump Out	7727	
Stage 2	7593	1.250	7504	
Stage 3	7370	1.500	7282	
Stage 4	7148	1.625	7059	
Stage 5	6967	1.750	6878	
Stage 6	6744	1.875	6655	
Stage 7	6521	2.000	6432	
Stage 8	6298	2.125	6209	And the second of the second o
Stage 9	6117	2.250	6028	Office of CFR Gas
Stage 10	5894	2.375	5805	
Stage 11	5671	2.500	5583	JUN 0-6-2012
Stage 12	5448	2.625	5360	
Stage 13	5225	2.750	5137	var nere energi di
Stage 14	5044	2.875	4955	Endonia
Stage 15	4822	3.000	4733	Post Total Control of the Control of
Stage 16	4599	3.250	4510	
Stage 17	4376	3.500	4287	
Anchor			2688	

03/12/12 Well head pressure 1310psi. Pressure test lines and start pumping at 7:40am at half rate. Work trucks to 100k scf/min and pump total of 1MM scf N2. Shut down and drop 1.5" ball for Stg 2. Wait 10 min and start pumping ball down at 18k scf/min. Land ball and open sleeve at 4329psi. Increase rate and pump total of 1MM scf N2. Shut down, drop 1.625" ball for Stg 3 Repeat Stimulation process for Stgs 3 - 17.

	Stg 1	Stg 2	Stg 3	Stg 4	Stg 5	Stg 6	Stg 7	Stg 8	Stg 9
Max P	5909	5338	5198	5052	5128	4892	4957	4741	4651
Avg P	5514	5304	5099	4980	5005	4803	4899	4641	4609
Max R	101.0	102.0	103.0	104.0	109.0	106.0	109.0	106.0	105.0
Avg R	100.0	100.0	102.0	103.0	107.0	15.0	108.0	104.0	104.0
5 min	1790	1820	1874	1915	1904	1934	1945	1920	1980
	Stg 10	Stg 11	Stg 12	Stg 13	Stg 14	Stg 15	Stg 16	Stg 17	
Max P	4586	4372	4396	4189	4398	4198	4169	4119	
Avg P	4543	4331	4332	4159	4337	4165	4149	4098	
Max R	105.0	104.0	105.0	101.0	109.0	106.0	105.0	105.0	
Avg R	104.0	103.0	103	101.0	107.0	105.0	104.0	103.0	
5 min	1959	1912	1964	1960	1941	1949	1904	1920	

DATE: 5/9/12 API # : 47-087-04713

State of West Virginia Department of Environmental Protection Office of Oil and Gas

Well Operator's Report of Well Work

Farm name:	_John Tatterson	-	Oper	ator Well No.:_	HR 458	
LOCATION: Elev	ation:	970'	Quad	rangle:	Reedy WV 7.5	5'
District:	Reedy_		County	Roan	.	
Latitude:	Reedy_ 12907Feet So	uth of 38 Des	55 M	in 00 Sec		
Longitud	e_8718'Feet W	rest of 81 I	Deg. 25 Min	n. 00 Sec.		
J			<u> </u>			
Company:Hard	Rock Exploration	on				
· · —	-		Casing &	Used in	Left in well	Cement fill
			Tubing	drilling		up Cu. Ft.
Address: 1244 Mai	rtins Branch Roa	ad				
Charlesto	n WV, 25312					
Agent: Marc Scho	II		13 3/8"	40	40	NA.
Inspector: Ed Gair			9 5/8"	890	890	432 ft3 CTS
Date Permit Issued	l: 11/30/11		7"	2582	2582	791 ft3 CTS
Date Well Work C	ommenced: 1/24	/12	4.5"	7623	7623	130 ft3
Date Well Work C	ompleted: 3/7/12					
Verbal Plugging:	···		Ran Gamma I	og from KOP(3777' – 4440'T\	/D)
Date Permission gr	ranted on:			n 3777' to surfa		Γ
Rotary x Ca		₹ig				
Total Depth (feet						
Fresh Water Dep			lad lad		}	
	(20)		7.	Date: 100 100 100 100 100 100 100 100 100 10		
Salt Water Depth	(ft.): 1895', 209	5'	Unit	of 011 &	Side Side Side Side Side Side Side Side	
2011 (1 0001 2 0p01	(-0.)(-0.2) -0.2					
Is coal being mined	l in area (N/V)?	N	M	AY 2 1 2012		
Coal Depths (ft.):					<u>.</u>	
Com Dopula (10)			· MARET	Japarimei	1 기주 /기주	1
OPEN FLOW D	АТА		TWV L			
			Environt	nontal Pro	JEGUOII	
Producing f	formationLo	wer Huron_Sha	lePay zone			
, and a second					70'TVD - 44	58' TVD
Gas: Initial	open flow_200_	MCF/d Oil:	Initial open fl	owF	3b1/d	
Final op	en flow1500	+ MCF/d	Final open fl	ow	_Bbl/d	
	open flow betw					
Static rock	Pressure	psig (surfac	e pressure) af	ter Hou	rs	
			•			
Second pro	ducing formatio	n	Pay zor	ne depth (ft)		
•	open flow		Initial open fl		Bbl/d	
	en flow		inal open flow			
	open flow betw					
	Pressure					
Static fock	11035010	parg (aurrac	c prossuro, ar		uro	
NOTE: ON BAC	CK OF THIS FO	RM PUTTHE	OLLOWING	1). DETAILS	OF PERFORAT	ED
NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL						
LOG WHICH I	S A SYSTEMAT	TIC DETAILED	GEOLOGICAL	L RECORD OI	ALL FORMAT	TONS,
	LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.					
Signed:		a Fotesk				
5	By: Pers den	1000				
	Date: (5/21/2	١١٢	V			

Formation:	Top:	Bottom:
Soil, Sand, Shale	0	1789
Salt Sand	1789	2049
Lime	2049	2089
Injun	2089	2109
Shale	2109	2494
Coffee Shale	2544	2559
Devonian Shale	2559	4458
Lower Huron Section	4360	4458

All depths shown As TVD

02/06/12 Run total of 177 jts of R-3 4.5" 11.6ppf N-80 casing to depth of 7623'. Run 15 stg Packers Plus mechanical system. Pump N2 to set packers and hold for 20 min at 3000psi. Continue to increase pressure and open stage 1. RU to perform annular squeeze and pump 100sks at 15ppg. Follow cmt with 3bbl water.

	Sleeve	Sleeve Size	Packers	
Stage 1	7621.0	P/O Shoe	7448.79	
Stage 2	7350	1.500	7261.89	
Stage 3	7127	1.375	7038.99	
Stage 4	6946	1.625	6857.89	
Stage 5	6723	1.750	6634.98	
Stage 6	6500	1.875	6412.03	
Stage 7	6319	2.000	6230.91	
Stage 8	6096	2.125	6007.96	
Stage 9	5873	2.375	5785.08; ECEVED	
Stage 10	5650	2.500	5562.09 e of Oll & Gas	G.
Stage 11	5469	2.750	5380.95	sel.
Stage 12	5246	2.875	5158.01 4935.13 ^{MAY} 2 1 2012	
Stage 13	5023	3.125	4935.13 ^{MAT & L LUIL}	
Stage 14	4801	3.250	4712.18	
Stage 15	4619.0	3.500	4489.27 Department o	Ŕ
Anchor		30	E :7897:53 mental Prote	

03/07/12. MIRU Baker Stim crew. Bring trucks in at half rate and work up to 94k scf. Pump total of 1MM scf N2. Shut down and load ball for Stg 2. Start pumping at 18k scf/min to land ball and open sleeve at 4310psi. Up rate and pump total of 1MM scf N2. Drop ball for Stg 3 and wait for product. Start pumping at 17k scf, land ball and open sleeve at 4419psi. Up rate and pump total 1MMscf N2. Drop ball for Stg 4 and repeat procedure for stages 4 – 15.

13.								
	Stg 1	Stg 2	Stg 3	Stg 4	Stg 5	Stg 6	Stg 7	Stg 8
Max P	5963	5995	5930	5743	5596	5689	5505	4949
Avg P	5742	5783	5008	5557	5530	5602	5475	4909
Max R	94.2	90.8	96.9	104.4	104.5	104.2	105.0	106.0
Avg R	84.9	89.0	91.1	101.8	103.2	102.7	103.0	104.6
5 min	2457	2345	2129	2155	2100	2191	2147	1990
	Stg 9	Stg 10	Stg 11	Stg 12	Stg 13	Stg 14	Stg 15	
Max P	5059	4854	4439	4508	4376	4495	4351	
Avg P	5008	4820	4420	4443	4362	4405	4306	
Max R	105.0	106.0	105.0	107.0	105.0	103.0	105.0	
Avg R	102.4	103.0	104	105.0	104.0	102.0	104.0	
5 min	N/A	1936	1851	1954	1912	2012	2107 (2 min)

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	May 30, 2012
API#:	47-103-02695

Farm name: Weekley, Larry I. & Donna S.	Operator Well No.: Weekley 8H			
LOCATION: Elevation: 727'	Quadrangle: _	Po	rters Falls	
District: Green	County:		etzel	
Latitude: 12,170 Feet South of 39 Deg. Longitude 8,000 Feet West of 80 Deg.				
Company: Stone Energy Corporation				
Address: 6000 Hampton Center, Suite B	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Morgantown, WV 26505	20"	95'	95'	GTS
Agent: Tim McGregor	13.375"	692'	692'	843 - CTS
Inspector: Derek Haught	9.625"	2,177'	2,177'	945 - CTS
Date Permit Issued: 8/10/2011	5.5"		11,509'	2,755
Date Well Work Commenced: 9/29/2011				
Date Well Work Completed: 4/5/2012				
Verbal Plugging:	1s	Plug Back from	m 2,985' to 1,8	00'
Date Permission granted on:	2ne	Plug Back fr	om 2,300' to 1,	800'
Rotary Cable Rig		See Detai	s on Page 2	
Total Vertical Depth (ft): 6,464	v.	Signal Andrews		
Total Measured Depth (ft): 11,509				
Fresh Water Depth (ft.): 105		JUN 97	eg fjelde Handelden	
Salt Water Depth (ft.): 817				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 587			, , , , , , , , , , , , , , , , , , ,	a d
Void(s) encountered (N/Y) Depth(s) N/A				
OPEN FLOW DATA (If more than two producing formation Producing formation Pay 2 Gas: Initial open flow MCF/d Oil: Initial open flow Time of open flow between initial and final tests Static rock Pressure psig (surface pressure) af Second producing formation Pay zor Gas: Initial open flow MCF/d Oil: Initial open flow Final open flow MCF/d Final open flow Time of open flow between initial and final tests Static rock Pressure psig (surface pressure) af	cone depth (ft) owBblHours terHour ne depth (ft) owBblHours	nl/d WELL IS s	ita on separate sh	

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Signature

6/5/2012 Date

Were core samples taken? Yes	_NoX	Were cuttin	ngs caught during dri	lling? Yes_X	No
Were Electrical, Mechanical or Geophy Log	rsical logs recorded on t	his well? If yes,	, please list_MWD (Gamma Ray ar	nd Mud
NOTE: IN THE AREA BELOW FRACTURING OR STIMULATING DETAILED GEOLOGICAL REC COAL ENCOUNTERED BY THE V	G, PHYSICAL CHAN ORD OF THE TOPS VELLBORE FROM S	GE, ETC. 2). T S AND BOTT(HE WELL LOG W OMS OF ALL FO	VHICH IS A SYS	TEMATIC
Perforated Intervals, Fracturing, or Stin	nulating:				
Vell has not yet been stimulated. Once	completed a revised WR	l-35 Form will be	submitted.		
	 				
Distribution of the Distri	15 17				
Plug Back Details Including Plug Type					
80 sacks Class H (@ 15.8 ppg) cer		CICK Off plug fro	m 2,300' to 1,844' j	pumped on 3/22/2	2012. Set
vith 196 sacks Class A (@ 16.0 ppg)	Cernent.				
Formations Encountered: Surface:	Top De	pth	/	Bottom Dept	th
See attached sheet for formation	s encountered and	their depths.	,		
				· · · · · · · · · · · · · · · · · · ·	
					-
					
				•	
				-	
				•	1

WEEKLEY #8H API 47-103-02695 Stone Energy Corporation

Horizontal

	Тор	Top (ft	Bottom (ft	Bottom (ft		
	(ft TVD)	MD)		TVD)	MD)	_	
Sandstone & Shale	Surface		*	587		FW@	105'
Pittsburgh Coal	587		*	592			
Sandstone & Shale	592		*	1992		sw @	817'
Little Lime	1680		*	1710			
Big Lime	1710		*	1810			
Big Injun	1810		*	1868			
Sandstone & Shale	1686		*	2340			
Berea sandstone	2340		*	2351			
Shale	2351		*	2538			
Gordon	2538		*	2543			
Undiff Devonian Shale	2543		*	5685	5820		
Rhinestreet	5685	5820	~	6115	6290		
Cashaqua	6115	6290	~	6228	6438		
Middlesex	6228	6438	~	6252	6474		
West River	6252	6474	~	6318	6582		
Geneseo	6318	6582	~	6344	6634		
Tully limestone	6344	6634	~	6376	7002		
Hamilton	6376	7002	~	6418	6820		
Marcellus	6418	6820	~	6464	11509		
TD	6464	11509					

^{*} From Pilot Hole Log and Driller's Log

[~] From MWD Gamma Log

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State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	10/16/2012
API#:	47-001-03013

Farm name: Smith, Joanne V.	Operator We	II No.: Waldma	n 4	
LOCATION: Elevation: 1370' GL / 1380' KB		Brownton 7.5		
District: Pleasant	County: Bar	hour		
Latitude: 6,590 Feet South of 39 Deg.	15 Min		ec.	
Longitude 1.240 Feet West of 80 Deg	. <u>10</u> Min			
Company: Petroleum Development Corporation				
Address: 120 Genesis Boulevard	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Bridgeport, WV 26330	11 3/4"	72'	72'	Sanded in
Agent: Bob Williamson	8 7/8"	1354'	1354'	448
Inspector: Bryan Harris	5 1/2"	7898'	7898'	297
Date Permit Issued: 01/30/2009				
Date Well Work Commenced: 07/15/2009	2 3/8"	7709'	7709'	
Date Well Work Completed: 11/18/2009				
Verbal Plugging:				
Date Permission granted on:			<u> </u>	
Rotary Cable Rig				
Total Vertical Depth (ft): 7908'				
Total Measured Depth (ft): 7908'				
Fresh Water Depth (ft.): 31', 111'				
Salt Water Depth (ft.): None Reported				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 142', 433', 519'				
Void(s) encountered (N/Y) Depth(s) N				
OPEN FLOW DATA (If more than two producing formation Producing formation Marcellus Pay z Gas: Initial open flow NA MCF/d Oil: Initial open flow Final open flow 200 MCF/d Final open flow	one depth (ft) ow Bb	7720' -1/d	ata on separate sl	neet)
Time of open flow between initial and final tests	Hours	/ u	y - r co-y	haka aman Janghumi hasal
Static rock Pressure 2300 psig (surface pressure) aft	ter 24 Hours	S	*· '	
Second producing formation Pay zon	ne depth (ft)		e de ser en en en en en en en en en en en en en	
Gas: Initial open flow MCF/d Oil: Initial open flo			907	17 2012
Final open flow MCF/d Final open flow	Bbl			
Time of open flow between initial and final tests Static rock Pressure psig (surface pressure) aft				
		į, c	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	e e e e e e e e e e e e e e e e e e e
I certify under penalty of law that I have personally examined a all the attachments and that, based on my inquiry of those individual that the information is true, accurate, and complete.	nd am familiar v iduals immediat	with the inforn cly responsible	nation submitted e for obtaining th	on this document and e information I believ
The willing		10/1	6/2012	

Signature

Date

Were core samples taken?	YesNo_XX	Were cuttings caught during drilling? Yes XX No
Were Electrical, Mechanica Monopole/Cross Dipole Semblance.	l or Geophysical logs recorded on Protechnics SpectreScan, Hotwell GR/CCL, Wes	this well? If yes, please list Mud Log, Weatherford Triple Combo, Compactherford GR/CCL/CBL.

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

8/21/2009: MIRU Hotwell & run GR/CCL log from 7876' - 7240'. Perf from 7806-7826 (80 holes) & from 7720-7740 (80 holes). 10/1/2009 60 bbls of fluid was pumped at a rate of 15 bpm and an ISIP of 2399 was obtained. 5 minutes later, the stimulation was continued with starting pressure at 2340 psi. The pressure "rolled over" at 4829 psi at a rate of 35 bpm. The rate was increased to 66 bpm with a treating pressure of 5082 psi. The pad was pumped as designed. Introduction of sand began with 100 mesh at 0.5 ppa. The rate was 69 bpm at a TP of 4910. The 100 mesh was continued as designed with increases to concentration as follows: 0.5, 0.75, 1, 1.25, 1.5, 2, 2.5. This sequence was performed twice giving a total of 1021 sacks of 100 mesh. Once the 100 mesh was completed, 40/70 mesh sand was utilized. The 40/70 began to be pumped at a rate of 70 bpm and a TP of 4715 psi. The concentration was as follows: 1, 1.5, 2, 2.5, 3, 4. The total 40/70 proppant pumped was 1960 sacks. The maximum pressure recorded was 5329 psi near the flush. Plug Back Details Including Plug Type and Depth(s): The maximum rate was 71 bpm. The average treating pressure was 4830 psi and the average rate was 69 bpm. The ISIP after stimulation was 4070 psi, 5 minute equal to 3366 psi, 10 minutes equal to 3249 psi, and the 15 minute equal to 3093 psi.

Top Depth		Bottom Depth	
1554	1570		
1594	1782		
2066	2076	Show Gas	
2134	2202		
2270	2279		
2454	2532		
2572	2616		
4522	4568	Show Gas	
6878	6914		
7545	7597		
7750	7842	Show Gas	
7842	7848		
7848	7852		
7852		e in a series of the series of	
	1554 1594 2066 2134 2270 2454 2572 4522 6878 7545 7750 7842 7848	1554 1570 1594 1782 2066 2076 2134 2202 2270 2279 2454 2532 2572 2616 4522 4568 6878 6914 7545 7597 7750 7842 7842 7848 7848 7852	

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

DATE:	1-27-2010	
API#:	47-009-00093	

District: Buffalo Latitude: 2980' Feet South of 40 Deg. Longitude 6140 Feet West of 80 Deg. Company: Chesapeake Appalachia, L.L.C. P.O. Box 18496		1, 30 Sec		
Longitude 6140 Feet West of 80 Deg. Company: Chesapeake Appalachia, L.L.C.	37 Min	. 30 Sec		
Chesapeake Appalachia, L.L.C.			··	
D.O. Poy 19406	Casing &	1		
Address: P.O. Box 18496	Casing &			
Tudi coo.	Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Oklahoma City, OK 73154-0496	20"	60'	60'	Driven
Agent: Eric Gillespie	13 3/8"	334'	334'	400 cf
Inspector: Bill Hendershot	9 5/8"	1712'	1712'	788 cf
Date Permit Issued: 5/6/2011	5 1/2"	11598'	11598'	3050 cf
Date Well Work Commenced: 5/13/2011				
Date Well Work Completed: 9/20/2011				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig				
Total Vertical Depth (ft): 5,897'(cement plug @11,508')				
Total Measured Depth (ft): 11,598'				
Fresh Water Depth (ft.): 525'				
Salt Water Depth (ft.): 1136'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 296				
Void(s) encountered (N/Y) Depth(s) N				

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information is true, accurate, and complete.

Marlene Williams
Signature

5/8/2010) Date

Were core samples taken? Yes No_X	Were cuttings caught during drilling? Yes X No
Were Electrical, Mechanical or Geophysical log	gs recorded on this well? If yes, please list GR, density, neutron, induction
FRACTURING OR STIMULATING, PHYS DETAILED GEOLOGICAL RECORD O	THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, SICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC F THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING ORE FROM SURFACE TO TOTAL DEPTH.
Perforated Intervals, Fracturing, or Stimulating:	
(See Attached)	
Plug Back Details Including Plug Type and Dep	oth(c): 0 1 0 11 500
Thug Back Details including Fing Type and Dep	744(5): Cement @ 11,508
Formations Encountered: Surface:	Top Depth / Bottom Depth
LS / SS 0 296	
Pittsburgh Coal 296 - 305	
SHALE 305 - 350	
SHALE / SS 350 - 480	
SS 480 - 950	
SHALE 950 - 1050	
SS 1050 - 1320	
SS / SHALE 1320 - 1440	
BIG INJUN 1440 - 1577	·
SHALE 1572 - 5876	
GENESEO 5876 - 5896	b
TULLY 5896 - 5978	@ % [₩] . □
HAMILTON 5978 - 6198	
MARCELLUS 6198 - 11598	RECEIVED
	Office of Call & Cos

W Depailment of Environmental Protection